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Maine Agricultural Experiment Station

ORONO

BULLETIN No. 196 DECEMBER, 1911

THE FUNGUS GNATS OF NORTH AMERICA
Part III

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BULLETIN No. 196.

THE MYCETOPHILIDÆ OF NORTH AMERICA.

PART III.*

THE MYCETOPHILINÆ.

O. A. JOHANNSEN.

The Mycetophilinæ embrace many genera which resemble each other in possessing an unbranched radial sector and in lacking the M-Cu crossvein. The subfamily is very probably of polyphyletic origin apparently having arisen for the most part from several Sciophiline genera. It is therefore not a natural group but for practical purposes a very convenient one. In nearly all the genera the anal furrow which simulates a longitudinal vein lying immediately behind the cubitus, is present, the first anal vein though frequently strong does not reach the wing margin in any recent North American form and the second anal is less distinct or vestigal.

In all the North American genera there are 2+14 antennal joints except in the genus *Cordyla*. The middle ocellus which is present in most, is absent in *Mycetophila* and *Cordyla* and rarely present in *Dynatosoma,* and *Exechia*. The thorax is high and arched and the abdomen more or less compressed. There is one spur at the apex of each fore tibia and a pair on each of the middle and hind tibiæ. The claws have one or more basal teeth. In some *Boletinæ* and *Coelosiæ* one claw is peculiarly modified.

It is evident that there are several natural groups of genera which may be tentatively arranged according to the following

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* Papers from the Maine Agricultural Experiment Station, Entomology No. 50. Parts I and II were published in Bulletins 172 and 180 respectively. Where the types of the new species are to be found will be stated in Part IV, now ready for the press.

scheme, though a study of the larval characters may somewhat modify this grouping.

SERIES I: *With the setulæ of the wings not arranged in distinct parallel rows; subcosta usually elongate.*

1. With a simple, unbranched cubitus. *Acnemia, Azana.*
2. With undulating Rs, detached M_1 and with numerous setæ among the setulæ of the wing. *Neuratelia, Odontopoda.*
3. No defective veins, Rs arises before middle of wing, subcosta ends in the costa; weak tibial setæ. *Boletina group.*
   a. Proboscis elongate. *Gnoriste.*
   b. Proboscis short. *Leptomorphus, Allocotocera. Boletina, Phthinia, Sackenia, Coelosia.*
4. Strong tibial setæ.
   a. Middle ocellus lower than laterals; venation defective. *Rondaniella.*
   b. Middle ocellus higher than laterals, the latter close to eye margin. *Leia.*
5. Subcosta does not end in the costa.
   a. Lateral ocelli remote from eyes. *Syntemna, Megophthalmidia.*
   b. Lateral ocelli nearly contiguous to eyes. *Docosia.*

SERIES II: *Setulæ of the wings arranged in parallel rows; subcosta usually short.*

1. Posterior basal seta of hind coxæ wanting, tibial setæ small.
   a. Antennæ and palpi normal. *Anatella, Trichonta.*
   b. Antennæ short, usually less than 15 jointed, second palpal joint enlarged. *Cordyla.*
2. Posterior basal seta of hind coxa present. *Genera 21 to 26.*
3. Posterior basal seta of hind coxa absent, tibial setæ stout.
   a. Cubitus branched. *Genera 27 to 31.*
   b. Cubitus simple. *Sceptonia, Zygomyia.*

In this as well as in the lower subfamilies the parts of the hypopygium furnish the most distinctive and easily recognizable specific characters. The homologies of these parts are as yet too uncertain and the terminology too unsatisfactory and inadequate to attempt descriptions and I have therefore only given figures illustrating specific characters. In comparing a specimen with a figure it usually will be necessary to examine a KOH preparation of the hypopygium which must be moved about under a supported cover glass until it occupies a position similar to that represented in the illustration, otherwise an erroneous impression is obtained. The ovipositor of the female in some genera appears to possess good characters but in gen-

eral I have refrained from naming specimens represented by females alone.

The wing venation is usually not described but instead photographic reproductions are given of most species. The term metatarsus for convenience is retained to designate the first tarsal joint though its use in this sense is etymologically incorrect. To avoid unnecessary repetition some of the statements made in the synoptic tables of genera and species are not repeated in the description and hence it will be necessary to consider the characters given in the keys, in the tables of leg measures, together with the figures of wing and hypopygium and the diagnosis of the species, combined as constituting the description.

Following the description of a species is given in brackets the initials of the collector: J.M.A., (Prof. J. M. Aldrich); J.B., (Prof. John Barlow); J.C.B., (Prof. J. C. Bradley); C.W.J., (Mr. C. W. Johnson); J.G.N., (Prof. J. G. Needham); W.M.W., (Prof. W. M. Wheeler).

Nomenclature. The arrangement of genera given here is practically the same as that adopted by me in *Genera Insectorum* Fasc. 93, to which the reader is referred for the synonymy. It may be well to state that in this work several of Rondani's genera were recognized which necessitated a few changes; thus *Rondaniella* was substituted for the *Leia* of Winnertz, *Neuratelia* for *Anaclinia, Leia* for *Neoglaphyroptera,* while *Brachycampta* was united with *Allodia.*

Economic relations. As far as known all of the species of this subfamily pass the earlier stages in mushrooms or decaying wood. The larvæ of several species of *Exechia* and of *Mycetophila* are occasionally found in cultivated mushrooms, *M. punctata* quite frequently. This species is also particularly common in wild mushrooms, at times very few plants escaping infestation. Mushroom growers need expect but little trouble from these pests if they will provide their cellars with fine mesh wire screens.

The early stages have been briefly characterized in the introduction to Part I. Descriptions of the larvæ of various species and their habits are reserved for publication elsewhere.

TABLE OF GENERA.

a. Proboscis much longer than the head.
  b. Media and cubitus unbroken; media forks a very short distance beyond the crossvein; palpi situated near apex of proboscis. (Figs. 169, 170). 1. *Gnoriste.**
  bb. Bases of media and cubitus defective. (West Indies). 2. *Probolæus.*

aa. Proboscis not elongate.
  b. Cubitus not forked or at most its anterior branch but faintly indicated.
    c. Lateral ocelli widely remote from eye margin; costa extends beyond the tip of Rs.
      d. Subcosta extends at least to base of Rs; media 2-branched. (Fig. 171). 3. *Acnemia.*
      dd. Subcosta short; media simple. 4. *Azana.*
    cc. Lateral ocelli nearly or quite contiguous to eye margin.
      d. Cell R_1 very narrow; Rs strongly arched. 32. *Sceptonia.*
      dd. Cell R_1 not unusually narrow; Rs nearly straight. 33. *Zygomyia.*
  bb. Cubitus with 2 branches, anterior branch may be detached at base.
    c. Anterior branches of *both* media and cubitus detached at base. (Fig. 173). (Leia Winnertz). 5. *Rondaniella.*†
    cc. Both media and cubitus forked, but immediate base of the anterior branch of *one* of them may be obliterated.
      d. Subcostal vein ends in the *costa* and is at least half as long as the basal cell R.
        e. Basal section of anterior branch of media wanting.
          f. Subcostal crossvein (Sc_2) present though faint, costa slightly produced beyond tip of Rs. (Fig. 174). (=Anaclinia). 6. *Neuratelia.*
          ff. Subcostal crossvein (Sc_2) absent, costa not produced beyond tip of Rs. 7. *Odontopoda.*
        ee. Basal section of anterior branch of media present.
          f. Subcostal crossvein (Sc_2) present.
            g. Cubitus forks under or proximad of fork of media.
              h. Subcostal vein enters the costa beyond, at, or little before the base of the radial sector.
                i. Fore metatarsus distinctly longer than its tibia; petiole of the media about ½ as long as the anterior branch; costa scarcely produced beyond tip of Rs. (Fig. 177). 8. *Leptomorphus.*
                ii. Fore metatarsus shorter than its tibia.
                  j. Subcostal vein prolonged far beyond the base of the radial sector; anal vein stout; petiole of media about ⅓ as long as the anterior branch. (Fig. 178). 9. *Allocotocera.*

* Eugnoriste is a Sciarid.

† In Manota, which is a Sciarid, the petiole of the media is wanting.

jj. Subcostal vein not produced far beyond the base of the radial sector; petiole of the media less than ½ as long as the anterior branch. (Fig. 179). 10. *Boletina.*

hh. The distance between the tip of the subcostal vein to the base of the radial sector is at least 1-4 the breadth of the wing at the widest part. (Fig. 193). (Neoglaphyroptera). 11. *Leia.*

gg. Cubitus forks distad of the media, ocelli in a transverse row on the broad front.

h. Subcostal crossvein proximad of base of Rs. (Fig. 209). 12. *Phthinia.*

hh. Subcostal crossvein distad of base of Rs. *Megalopelma* (See 12, *Phthinia fraudulenta*).

ff. Subcostal crossvein (Sc_2) absent.

g. Cubitus forks proximad or under fork of the media.

h. Anal vein produced to the margin (Fossil). 13. *Sackenia.*

hh. Anal vein not produced to the margin. (Fig. 243). 10. *Boletina,* pt.

gg. Cubitus forks distad of the fork of the media.

h. The lateral ocelli remote from the eye margin; the posterior basal seta of hind coxa absent. (Fig. 210). 14. *Coelosia.*

hh. The lateral ocelli close to the eye margin; subcostal vein short only rarely reaching costa; posterior basal seta of hind coxa present. 24. *Phronia,* part.

dd. Subcostal vein *if long* then ending either in R_1 or with its end free, usually short.

e. Costal vein extends noticeably beyond tip of Rs (if but slightly then the subcostal vein is long and ends in R_1).

f. Lateral ocelli separated from the eye margins by a distance sub-equal or greater than the diameter of the ocellus; posterior basal seta of hind coxa wanting.

g. Subcostal vein at least ½ as long as the basal cell R, and ends free or in R_1. (Fig. 213). 15. *Syntemna.*

gg. Subcostal vein less than ½ as long as the basal cell R; base of fork of cubitus proximad of base of the R-M crossvein; anal vein very short. (Fig. 216). 16. *Megophthalmidia.*

ff. Lateral ocelli nearly or quite continuous to the eye margin.

g. Subcostal vein less than ¼ the length of the basal cell R *and* ending in R_1, costa produced far beyond the tip of Rs; posterior basal seta of hind coxa absent. (Fig. 217). 18. *Anatella.*

gg. Subcostal vein either longer than ¼ of basal cell or it does not end in R_1.

h. The R-M crossvein is in the same line as the second section of the radial sector, thus apparently forming the basal section of the latter; fork of the media slightly distad of the fork of the cubitus or under it, costa produced beyond Rs. (Figs. 218, 241). 17. *Docosia.*

hh. The R-M crossvein makes a distinct angle with second section of the radial sector (Rs).

i. Subcostal vein more than ½ as long as the basal cell R ending in R_1, costa produced little if any beyond the tip of Rs; basal seta of hind coxa wanting.

j. Setæ of hind tibia short, not much longer than the diameter of the tibia; three ocelli, middle one small. (Fig. 221). 19. *Trichonta.*

jj. Setæ of hind tibiæ usually arranged in 3 rows, stout, more than twice as long as the diameter of the tibia; middle ocellus rarely present; costa not produced beyond Rs. 26. *Dynatosoma.*

ii. Subcostal vein less than ½ as long as basal cell R.

j. Cubitus forks noticeably distad of fork of the media, the branches of the former widely divergent; costa but little produced; anal vein short, tibial setæ small; basal seta of hind coxa present. 24. *Phronia*, part.

jj. Cubitus forks under or proximad of the fork of the media; branches of the former make a very acute angle with each other and are but slightly divergent, setæ of hind tibiæ strong, more than twice as long as the diameter of the tibia; ocelli 3; basal seta of hind cosa absent. 29. *Epicypta*, part.

ee. Costa does not extend beyond tip of radial sector (Rs).

f. Second palpal joint much enlarged, swollen, flattened ovate; antennæ very short, but little longer than the head, 11 to 16 jointed; ocelli 2; basal seta of hind coxa wanting. (Fig. 224). 20. *Cordyla.*

ff. Second palpal joint not distinctly swollen, antennæ longer than the head.

g. Posterior basal seta of hind coxa present; ranges of setæ on hind tibiæ slender, (except in Brachypeza) usually little if any longer than the diameter of the tibia.

h. Intermediate antennal joints closely sessile; annular or torus like; tibiæ stout, noticeably enlarged at the ends, the setæ moderate; base of fork of the cubitus proximad of the proximal end of the R-M crossvein; subcostal vein ending in R_1; wing sometimes with markings. (Fig. 229). 21. *Brachypeza.*

hh. Antennal joints usually subcylindrical; and otherwise not with the above combination of characters; wings unmarked except in *Telmaphilus.*

i. Cubitus forks proximad of the fork of the media.

j. Anal vein very stout and ends abruptly, usually a little beyond the fork of the cubitus, angle between the branches of cubitus very acute at the base, the lower branch beyond its middle suddenly diverging from the upper branch, base of fork at or proximad of proximal end of the R-M crossvein. (Fig. 230). 22. *Rhymosia.*

jj. Anal vein slender (Fig. 238) (including Brachycampta). 23. *Allodia.*

ii. Cubitus forks distad of the fork of the media.

j. The media forks distad of the end of the basal cell R; costa extends very little beyond end of the radial sector; ocelli 3, middle one very small.

k. Wings hyaline; subcosta less than ½ length of basal cell. 24. *Phronia.*

kk. Apex of wings more or less clouded or smoky; subcosta end free beyond middle of basal cell. 25. *Telmaphilus.*

jj. The media forks proximad of the end of the basal cell R, the subcosta ends free; middle ocellus present or absent. (Fig. 242). 26. *Exechia.*

gg. Posterior basal seta of hind coxa absent; the ranges of setæ on the hind tibiæ conspicuously stout, setæ at least twice as long as the diameter of the tibiæ; crossvein usually with dark spots, wing often fasciate.

h. Subcostal vein ends in R_1, branches of the cubitus noticeably divergent; usually three ranges of setæ on hind tibiæ; middle ocellus usually absent. 27. *Dynatosoma.*

hh. Subcostal vein ends free.

i. Hypopygium of the male conspicuously large and husk like; female with a fringe of long setæ on ventral side of sixth abdominal segment; middle ocellus present; branches of cubitus subparallel at end. 28. *Opistholoba*

ii. Genitalia not as described above.

j. Two ocelli, none in the middle; costa not produced beyond the tip of the radial sector; branches of cubitus usually parallel on apical third. (Fig. 245). 31. *Mycetophila.*

jj. Three ocelli present, middle one minute.

k. Branches of the cubitus make a very acute angle with each other and slightly divergent; fork usually proximad of the fork of the media; costa usually slightly produced beyond the tip of the radial sector. 29. *Epicypta.*

kk. Branches of the cubitus more or less convergent, rarely parallel, fork frequently distad of the fork of the media; costa ends at tip of Rs. 30. *Mycothera.*

1. Genus *Gnoriste* Meigen.

Syst. Beschr. 1. 243. 1818.

Proboscis slender, longer than head and thorax combined; the palpi near the apex (Part I, fig. 53); ocelli 3, the laterals remote from the eye margin. Wings large; costa produced beyond tip of the radial sector (Rs); subcostal vein long; subcostal crossvein (Sc_2) present; fork of the cubitus proximad of the fork of the media; anal vein incomplete. (Fig. 169).

Table of Species.

a. Proboscis over .7 the length of the insect to tip of abdomen; cubitus forks proximad of the proximal end of the crossvein, somewhat variable; costa distinctly produced beyond the tip of Rs; subcosta ends at or proximad of the base of Rs. N. Y.; Calif. (Fig. 169). 1. *megarrhina.*

aa. Proboscis less than ⅝ of the length of the insect.

b. Proboscis over half the length of the insect; fore metatarsus and its tibia subequal in length. 2. *groenlandica.*

bb. Proboscis less than ½ as long as the insect; fore metatarsus shorter than the tibia.

c. Cubitus forks slightly proximad of the base of Rs; the subcostal crossvein indistinct, proximad of the middle of the subcosta. (Fig. 170). 3. *macra* n. sp.

cc. Cubitus forks nearly under the base of Rs; the subcostal crossvein distad of the middle of the subcosta. 4. *apicalis.*

G. dentoni Scudder is a fossil from Utah.

1. *Gnoriste megarrhina* Osten Sacken.

Bull. U. S. Geol. Survey. Terr. III. 193. 1877.

Male and female. Length of body 7 mm.; of the proboscis 5.5 mm.; face deep velvet black, opaque; antennæ brown, second joint somewhat reddish; proboscis brown; vertex black, with a slight gray pollen; thorax brownish-yellow, with 3 black stripes on the dorsum, the intermediate geminate; in the male the thorax is nearly entirely black; abdomen dusky, in the female the segments with posterior margins yellowish. Legs yellow; tarsi infuscated, in the male one claw of each foot modified, in the fore and middle feet this claw is deep spoon-shaped, with fluted sides and serrate margin, in the hind foot it is more slender, ribbed. Wings with slight yellowish tinge, a light gray shadow along the hind margin beginning at the apex. Halteres yellow. (Fig. 169). Hypopygium (Figs. 137, 139). "California," Mass. (C.W.J.) and Ithaca, N. Y. May and June.

2. *Gnoriste groenlandica* Lundbeck.

Dipt. groenl. I, Vidensk. Meddel. nat. Foren. i. Kbhvn. 1898.

Male and female. Length 6.5 to 7.5 mm.; proboscis 4 mm. Coloring similar to *G. megarrhina,* but more cinereous. Wings hyaline slightly yellowish tinged, venation as in *G. apicalis* except that the cubitus forks nearer the base of the wing. Fore metatarsus and its tibia subequal in length. "Greenland."

3. *Gnoriste macra* n. sp.

Male. Length 6½ mm; proboscis 2 mm. Black, shining, including front and vertex; proboscis, palpi and antennæ brown; thorax with yellow hairs; legs including coxæ yellow, tarsi darker; one claw of fore and middle foot modified as in *G. megarrhina,* the hind foot is broken in the single male specimen. Wings hyaline with yellow tinge along costal margin (Fig. 170). Halteres yellow. Hypopygium yellowish resembling that of *megarrhina,* differing chiefly in the form of the forceps (Fig. 138).

Female. In coloring similar to the male but the thorax is yellow to brown with 3 shining black subconfluent dorsal stripes. Tarsal claws not modified. In both sexes the fore metatarsus is about ⅞ as long as the tibia. White Fish Bay, Wisconsin (W.M.W.) May.

4. *Gnoriste apicalis* Meigen.

Syst. Beschr. I. 243. 1. 1818.

Male and female. Length 7-8 mm. Coloring as in *G. macra* from which it differs in wing venation, the subcostal crossvein being distad of the middle of the subcosta, and the cubitus forks under the base of the radial sector. The tarsi of the fore legs twice as long as the corresponding tibiæ; the fore tibia about 1-8 longer than its metatarsus. "Europe." Said to occur also in Alaska and Colorado.

2. Genus *Probolæus* Williston.

Trans. Ent. Soc. London, p. 261. 1896.

Proboscis more than half of the length of the body, directed downwards and forwards, composed of five slender bristles; palpi wanting. Face very narrow, ocelli apparently absent. Abdomen slender, longer than the wings. Legs elongate, hind legs stouter, femora thickened, and the tibia clubbed. Neuration defective, the proximal portion of the media and the anterior branch of the cubitus wholly invisible; anal vein apparently absent; costa reaches a considerable distance beyond the tip of the radial sector. It is possible this genus should be placed with the *Sciarinæ*.

Probolæus singularis Williston.

Trans. Ent. Soc., London, 261, pl. 8, fig. 15. 1896.

Male. Length 4-5 mm. Front, face and occiput black; antennæ brown, the basal joints somewhat yellowish. Mesonotum opaque deep reddish brown, the humeri and postalar callosities yellowish; pleura brown or yellowish-brown, shining. Abdomen black, the first segment and a posterior band on the second, third and fourth segments yellow. Wings nearly hyaline, lightly clouded on the outer part. Legs, including coxæ, light yellow; the tarsi and the thickened portion of the hind tibiæ infuscated or blackish. Halteres yellow. "St. Vincent Island. Altitude 1800 feet."

3. Genus *Acnemia* Winnertz.

Verh. Zool.-bot. Ges. Wien, XIII. 798. 1863.

Ocelli 3 in number placed high upon the front, the laterals remote from the eye margin. Legs moderately long, stout; the

femora, particularly the hind pair, compressed, all tibiæ with weak lateral setæ. The fore tibiæ have one range, the middle tibiæ 3, and the hind tibiæ 2 ranges of setæ, those on the inner side very minute. Wing oval; the costa extends far beyond the tip of the radial sector, ending before the tip of the wing; subcosta long; subcostal crossvein (Sc_2) present; the short basal cell ends proximad of the fork of the media; cubitus not branched; anal vein vestigial. (Figs. 171, 172).

Table of species.

a. Wings with brown crossband extending from apex of R_1 across the wing; a spot below the cubitus near apex. Length 5mm. Calif. 1. *varipennis.*

aa. Wings without bands.

b. Black, coxæ and legs yellow; costa produced 1-3 of distance to M_1; Md., N. Y., Wash. 2. *psylla.*

bb. Yellow, abdomen fasciate; costa produced less than 1-4 distance to M_1. N. J., N. Y., Mass. 3. *flaveola.*

1. *Acnemia varipennis* Coquillett.

Proc. Wash. Ent. Soc. VI. 169. 1904.

Female. Length 5mm. Yellow; the antennæ beyond the second joint, a circle around each ocellus, a spot in front of each wing, the breast largely, a streak at the extreme apex, 2 longitudinal vittæ on lower half of metanotum, a spot in front of the halteres, the abdomen except bases of segments and the genitalia, the tarsi except their bases, and the knob of the halteres, black; a pair of widely separated brownish subdorsal vittæ on the mesonotum; hairs and bristles chiefly yellow. Wings grayish hyaline, tinged with yellow along the costa, base of radial sector clouded with brown, a brown crossband extends from apex of cell R_1 to apex of cell M_2, becoming grayish posteriorly, a large brown spot along under side of cubitus before its apex. "Mountains near Claremont, Calif."

2. *Acnemia psylla* Loew.

Berlin. Ent. Zeitschr. XIII. 148. 1869.

Male. Length 2.5 mm. Black, shining, pile yellowish. Head black; antennæ dusky, pale toward the base. Hypopygium rather prominent, blackish (Fig. 141). Coxæ and legs yellowish, trochanters each with a black spot, tibial spurs yellow;

tarsi subfuscous; fore metatarsus about .9 as long as its tibia. Wings grayish tinged, the heavier veins fuscous, the others paler (Fig. 171). Halteres black, with yellow peduncle. "Md.," and Ithaca, N. Y.

Var a. In a specimen from Washington (J.M.A.) the costa is slightly less produced and the dorso-mesal process of the lateral sclerite of the hypopygium acute at apex (Fig. 140 d). In the eastern species this part (Fig. 141 d) is serrate. The western specimen may represent a different species.

3. *Acnemia flaveola* Coquillett.

Proc. U. S. Nat. Museum, XXIII, 598. 1901.

Female. Length 3 mm. Yellow, the antennæ and tarsi becoming brown toward their apices, segments 2 to 6 of abdomen each with a median brown fascia, shortest on the second and third; a brown dot on under side of each trochanter; fore metatarsus less than 7-8 as long as its tibia; wings hyaline (Fig. 172). "N. J.;" Mass., (C.W.J.); R. I., (J.B.); N. C., (C. U. Coll); Ithaca, N. Y.

4. Genus *Azana* Walker.

Insect. Brit. Diptera. III. 26. 1856.

Ocelli 3, high on the front, the laterals widely remote from the eye margin. Legs stout, the femora compressed; fore tibiæ without, the middle and hind pairs each with 2 ranges of delicate setæ. Wings oval; the costa produced beyond the tip of the radial sector. Subcostal vein is shorter than the humeral crossvein and ends free. R_1 ends a little distad of the middle of the wing, the radial sector arises at about 1-3 the wing length from the base; the R-M crossvein is long, longitudinal in position, forming apparently the beginning of the radial sector; both media and cubitus are simple; anal vein wanting.

Azana sp.

I have seen a single defective specimen from Maine of a member of this genus.

5. Genus *Rondaniella* Johannsen.

Genera Insectorum, Fasc. 93. 66. 1909.

Leia (sensu Winnertz nec Rondani). Verh. Zool.-bot. Ges. Wien. XIII. 792. 1863.

Ocelli 3 in number, placed high upon the front, laterals remote from the eye margin. Legs strong, hind tibiæ with 3 ranges of strong setæ outwardly, the middle tibiæ each with a single long seta on the flexor surface beyond the middle. Wings elongate oval; subcostal vein ends at about 1-3 the length of the wing, the subcostal crossvein (Sc_2) wanting; the costa ends far beyond the tip of the radial sector, but does not reach the apex of the wing; basal cell R is about half the length of the wing; the anterior branches of both media and cubitus are detached at the base (Fig. 173).

Table of species.

a. Petiole of the media noticeably longer than the cell in the fork, which is wide open at the base; M_1 not distinctly sinuate. (Fig. 173). 1. *abbreviata.*

aa. Petiole of the media and the cell subequal, the cell narrowly open at the base, M_1 sinuate. 2. *sororcula.*

punctata Bellardi and *unicolor* Walker probably belong to *Leia.*

1. *Rondaniella abbreviata* Loew.

Berliner Ent. Zeitschrift. XIII. 147. (Leja). 1869.

Male and female. Length 2.5 mm. Pale yellow; apical portion of the antennæ, confluent thoracic stripes which are abbreviated anteriorly, metathorax and apex of each hind femur, black; each abdominal segment with subfuscous posterior margin. Hypopygium as figured (Fig. 142). Apex of wing widely fuscous, the cell Rs noticeably more than twice as long as M_1 which is wide open at the base (Fig. 173). "Middle states;" N. C., (W.B.); Wis., (W.M.W.); Selkirk Mts., B. C., (J.C.B.); Ithaca, N. Y.; and Orono, Maine.

2. *Rondaniella sororcula* Loew.

Berliner Ent. Zeitschrift. XIII. 147. (Leja). 1869.

Male. Length 2.5 mm. Pale yellow; flagella of the antennæ, posterior half of the thorax and apex of each hind femur, black; posterior margin of each of the first 4 abdominal segments, fuscous, fifth and sixth segments wholly black, apex of the wings fuscous; cell Rs about twice as long as cell M_1 which is narrowly open at the base. "New York."

6. Genus *Neuratelia* Rondani.

Dipterologiæ Italicæ, Prodromus I. 195. 1856.
Anaclinia Winnertz, Verh. Zool.-bot. Ges. Wien. XIII, 770. 1863.

Ocelli 3 in number, the laterals remote from the eye margin. Wings elongate oval; costa produced more or less beyond the tip of the radial sector; subcosta ends before the middle of the wing; subcostal crossvein (Sc_2) present though often faint; radial sector strongly undulating; anterior branch of media disconnected at the base (Figs. 174-176).

Table of species.

a. Base of each abdominal segment and larger part underneath yellow; subcostal crossvein absent. *Odontopoda sayi.*
aa. Abdomen either unicolored or apices of segments yellowish; subcostal crossvein present though sometimes rather faint.
b. Coxæ largely black; the humeri, tibiæ, inner side and narrow apices of front coxæ and the halteres, yellow, remaining parts blackish; fore metatarsus longer than its tibia. 1. *coxalis*
bb. Coxæ largely yellowish.
c. Fore metatarsus over 3-8 longer than tibia.
d. Thorax largely blackish (Calif.). 2. *silvatica* n. sp.
dd. Thorax largely yellowish (Vt.). 3. *scitula* n. sp.
cc. Fore metatarsus not more than 1-20 longer than its tibia.
d. Abdominal segments with yellow posterior margins.
e. Fore metatarsus slightly shorter than its tibia; thorax largely yellowish. (Id.). 4. *eminens* n. sp.
ee. Fore metatarsus slightly longer than its tibia; thorax mainly dark brown. (Mass.). 5. *desidiosa* n. sp.
dd. Abdomen wholly black. 6. *nemoralis.*

1. Neuratelia coxalis Coquillett.

Journal N. Y. Ent. Soc. XIII. 68. 1905 (Anaclinia).

Length 5 mm. Black, the humeri, femora, tibiæ, inner side and narrow apices of front coxæ, and the halteres, yellow. Body somewhat polished, thinly gray pruinose, the hairs yellowish. First joint of front tarsi longer than the tibiæ. Wings hyaline, venation normal. "B. C.," June and July.

2. *Neuratelia silvatica* n. sp.

Male. Length 6 mm. Blackish brown, somewhat polished; the pleura brown; the palpi, labrum, scape of flagellum, small humeral spot, coxæ, femora, tibiæ, and halteres yellow, tarsi

and trochanters brown; the body hairs yellowish. Fore metatarsus over 1.4 times the tibia in length; antennæ nearly twice as long as the thorax. Wings hyaline, venation as figured (Fig. 174). Hypopygium (Fig. 143). Felton, St. Cruz Mts., Calif., May. (J.C.B.)

3. *Neuratelia scitula* n. sp.

Male. Length 5 mm. Yellowish, somewhat polished; the head and face excepting mouth parts, and abdomen dark brown; the apical half of antennæ, 3 indistinct fine lines on the mesonotum and its hind margin, some spots on the pleura, apex of scutellum, the trochanters, and tarsi paler brown; body hairs yellow. Fore metatarsus over 1.4 times the tibia in length, antennæ nearly twice as long as the thorax. Wings hyaline, veins brown, venation nearly as in *N. silvatica.* Hypopygium (Fig. 144). Brattleboro, Vt., (C.W.J.) July; N. J.

4. *Neuratelia eminens* n. sp.

Female. Length 5 mm. Yellowish, somewhat shining; head except palpi and basal antennal joints, dark brown; thorax dusky yellowish, the 3 broad stripes on mesonotum and the pleura light brown; basal 2-3 of each abdominal segment brown, the margins yellow. Legs including coxæ yellow, the trochanters and tarsi brown; fore metatarsus about 1-20 shorter than its tibia. Body hairs yellow. Wings hyaline, yellow tinged, veins brown, venation as figured (Fig. 175). Halteres yellow. Kendrick, Id., (J.M.A.).

5. *Neuratelia desidiosa* n. sp.

Female. Length 6 mm. Similar to the foregoing in venation and other characters, but the thorax is dark brown, with yellow humeri, margin of scutellum and base of metanotum. The metatarsi of all legs relatively slightly longer proportionally to their tibiæ than in *N. eminens,* the fore metatarsus about 1.04 times as long as its tibia. N. Adams, Mass. (C.W.J.), June.

6. *Neuratelia nemoralis* Meigen.

Syst. Beschr. I. 265. 1818 (Mycetophila).

Male. Length 5 mm. Black, somewhat shining; palpi, basal joints of antennæ, humeral spot, coxæ, femora, tibiæ and halteres yellow; the trochanters, front side of hind coxæ, apices

of hind femora, and the tarsi more or less brown. Fore metatarsus and its tibia subequal in length. Wings hyaline with brown veins, venation figured (Fig. 176). Hypopygium resembles somewhat that of *silvatica* in having a short ventral plate but differs decidedly in the form of the claspers which are shown depressed in figure 145. "Alaska;" Selkirk Mts., B. C.; and Muir Woods, Calif., (J.C.B.)

7. Genus *Odontopoda* Aldrich.

Report of State Geologist XXI. 187. 1896.

Proanaclinia. Meunier, Monogr. Mycetophilidæ, etc., 145, 1904.

This genus differs from *Neuratelia* only in lacking the subcostal crossvein. In Williston's Manual of the Diptera (3rd ed.) they are made synonymous. The type in the museum in Indianapolis is broken, only a fragment of the thorax remaining. See table of species of *Neuratelia.*

Odontopoda Sayii Aldrich.

Report of State Geologist XXI. 187. 1896.

Male. Length 6 mm.; of wing 4.7 mm. Front black, antennæ brown, except the first 3 joints, which are yellow; mouth parts yellow; thorax and coxæ yellow, rather pale; the dorsum however more acorn-colored without distinct lines. Abdomen brown, the bases of the segments and a larger part underneath of a lighter color, seventh segment distinct, nearly as long as the sixth, hypopygium as long as the seventh, first segment over half as long as the second. Femora and tibiæ yellow, with a brownish tinge, front tarsi black (the others wanting). Wings of a clear yellow tinge, lighter posteriorly. "Marengo cave, Indiana."

8. Genus *Leptomorphus* Curtis.

Brit. Ins. 365. 1831.

Ocelli 3, the laterals remote from the eye margin. Abdomen very long, slender, nearly linear, compressed, 7 segmented. Legs long, lateral setæ of the tibiæ very minute, fore metatarsus longer than its tibia. Wings shorter than the abdomen, setulose; costa very slightly produced beyond the tip of the radial sector; subcostal vein complete; ending near the middle of the wing; subcostal crossvein present; media forks far distad

of the base of the radial sector, cubitus forked under or proximad of it; anal vein does not reach wing margin (Fig. 177).

Table of species.

a. Mesonotum black (N. H.). 1. *hyalinus*

aa. Mesonotum yellow with black markings.

b. Mesonotum yellow, marked with a median Y and 2 lateral spots; scutellum black. 2. *ypsilon* n. sp.

bb. Mesonotum with 3 dark stripes, confluent posteriorly. 3. *Walkeri.*

L. parvulus belongs to *Allocotocera.*

1. *Leptomorphus hyalinus* Coquillett.

Proc. U. S. Nat. Mus. XXIII. 598. 1901.

Female. Length 9 mm. Yellow; an ocellar dot and the mesonotum, except the lateral margin, interrupted above the insertion of wings, black; antennæ, except the 2 basal joints, brown; abdomen with indications of an irregular brown fascia at apex of each segment; body polished; wings hyaline, densely short haired. "White Mts., N. H."

2. *Leptomorphus ypsilon.* n. sp.

Female. Length 8 mm. Head and mouth parts yellow, ocelli close together, surrounded by a blackened area; antennæ about 1.7 as long as the thorax, darker on apical 2-3, the first joint with a protuberance below which is covered with a tuft of fine black setæ. Thorax yellow, shining; mesonotum with a pair of broad black bands which arise behind the humeri, meet at about the middle of the dorsum and thence continued in a single line to the scutellum; on each side of this is a large rounded spot which does not reach the posterior margin; scutellum black. Abdomen yellow, posterior 1-3 of each tergite black. Legs including coxæ yellow, extreme tips of hind femora dark brown, tarsi brownish; fore metatarsus 1.6 times the tibia in length. Wings hyaline, apex from before the tip of R_1, with pale brown cloud; venation as figured (Fig. 177). Halteres yellow. Ithaca, N. Y. (2 specimens).

3. *Leptomorphus Walkeri* Curtis.

British Entomology, 365. 1831.

Male. Length 10 mm. Ferrugineous. Head, with proboscis, palpi and basal antennal joints yellow, ocellar spot dark.

Thorax with 3 shining blackish stripes which coalesce posteriorly. Abdomen brownish yellow, hind margins of segments 1 to 5 more or less, half of the sixth and the entire seventh, dark brown. Coxæ and legs yellow, the fore metatarsus about 1.5 times the tibia in length. Wings hyaline, apex and hind margin dusky, spot covering base of Rs; base of Rs more distad in this species than in *L. ypsilon*. "Europe and New Jersey."

9. Genus *Allocotocera* Mik.

Wien. Ent. Zeitg. V. 102. 1886.

Eurycera. Dziedzicki, Pam. Fizyjogr. V. 6. 1885.

Ocelli 3, laterals remote from the eye margin. Legs of moderate length. Wings oval, the costa extends beyond the tip of the radial sector; subcosta ends in the costa, subcostal crossvein present; petiole of media long, cubitus forks proximad of the distal end of the R-M crossvein; anal vein stout but ends before wing margin (Fig. 178). The wing venation and the short legs distinguish this genus from *Leptomorphus*.

Allocotocera parvula Coquillett.

Proc. U. S. Nat. Museum. XXIII. 597. 1901 (*Leptomorphus*). *parvula*, Johannsen, Gen. Ins. Fasc. 93., 75. 1909 (*Boletina*). *flavescens*, Johannsen, Gen. Ins. Fasc. 93., 72. 1909.

Female. Length 3.5 mm. Head, including mouth parts, and basal antennal joints (apical joints missing), wholly yellow, excepting conspicuous dark brown spot back of and contiguous to each lateral ocellus and a smaller surrounding the middle one. Thorax, including sternum, pleura, scutellum, and metanotum wholly yellow, dorsum with faint indications of 2 brown stripes. Abdomen yellow, margin of each of segments 2 to 5 and the whole of the apical segments dark brown. Thorax and abdomen hairy rather than setose. Legs yellow, apices of coxæ and of femora slightly brownish, tarsi pale fuscous; fore and middle tibiæ each with one row of small setæ on flexor surface and 3 or 4 on extensor surface; hind tibiæ each with 3 rows on extensor surface; the longest setæ on hind tibiæ not as long as diameter of the tibia; fore metatarsus a little over 1-2 as long as its tibia; spurs pale brown. Wings with a yellowish tinge, strongly setulose; veins yellow; a brown spot covers apex of R_1 and Rs extending to the tip of the costa.

Venation as figured (Fig. 178). Halteres yellow. Wisconsin. "N. J." I have examined the type hence the synonymy.

10. Genus *Boletina* Stæger.

Kröger: Naturhist. Tidsskr. III. 233. 1840.

Palæoanaclinia Meunier, Monogr. Mycetophilidæ, etc. 143. 1904.

Ocelli 3, placed in a flattened triangle upon the broad front, the middle one small, laterals remote from the eye margin. Legs slender, fore metatarsus shorter than its tibia, one claw of each foot in the male frequently modified, scoop-like, and fluted. Wings elongate, costa somewhat produced beyond the tip of the radial sector; subcosta ends before the middle of the wing in the costa, subcostal crossvein (Sc_2) present or absent; media forks under or somewhat distad of the radial sector; cubitus forks under or proximad of the fork of the media; anal vein incomplete (Figs. 179-192).

The genus *Palæanaclinia* cannot be considered distinct, for, with the exception of the absence of the subcostal crossvein, there are no structural differences. In one species (*B. obscura*) this vein may be either present or absent; in some others it is quite faint and inconspicuous.

Table of species.

a. Subcostal crossvein (Sc_2) present.
  b. Halteres black; Sc ends in C opposite base of Rs; Sc_2 slightly proximad of proximal end of crossvein. 1. *abdominalis.*
  bb. Halteres mainly yellowish.
    c. Yellow species; hind margins of abdominal segments 2 to 5 and the whole of 6 and 7 black; wings hyaline, broad apices gray; media with long petiole. 2. *Allocotocera parvula.*
    cc. Thorax usually dark, or with dark vittæ; if not then petiole of media but little longer than the crossvein.
      d. The fork of the cubitus proximad of the proximal end of the R-M crossvein (Figs. 179-181).
        e. Subcostal vein ends in the costa distad of the base of Rs; coxæ black. 3. *obscura* n. sp.
        ee. Subcostal vein ends in the costa opposite or proximad of the base of Rs; coxæ yellow.
          f. Fore metatarsus less than 2-3 as long as tibia; pleura yellow. 4. *cincta* n. sp.
          ff. Fore metatarsus at least 2-3 as long as tibia; pleura black. 5. *melancholica* n. sp.

dd. Fork of the cubitus opposite or distad of proximal end of crossvein.

e. Thorax partly yellow, usually with black thoracic stripes; spurs brown; fore tarsi nearly or quite twice, fore metatarsus over .8 as long as the tibia; palpi usually yellow.

f. Costa but slightly produced beyond Rs; Sc_2 near middle of Sc_1.

g. Cubitus forks proximad of the distal end of the crossvein; petiole of media less than 4 times as long as basal section of Rs. 6 *imitator* n. sp.

gg. Cubitus forks nearly under the fork of the media; petiole of the media over 6 times as long as basal section of Rs. 7. *gracilis* n. sp.

ff. Costa produced at least 1-4 distance from Rs to M.

g. Sc_2 near middle of Sc_1; antennæ nearly as long as the body in the male. 8. *longicornis* n. sp.

gg. Sc_2 distad of the middle of Sc_1.

h. Subcosta ends in the costa opposite base of Rs; abdomen of female with yellow fasciæ. 9. *notescens* n. sp.

hh. Subcosta ends distad of base of Rs; abdomen of female uniformly fuscous. 9a. *notescens*, varieties.

ee. Thorax black; and usually with yellow tibial spurs, shorter tarsi and dusky palpi.

f. Subcosta ends over the base of Rs; petiole of M is shorter than the crossvein; part of third joint of antenna yellow; posterior coxæ dark; abdomen of female fasciate; Arctic species. 10. *groenlandica*.

ff. With other combination of characters.

g. Sc_1 ends in C slightly proximad of the base of Rs; petiole of M shorter than the crossvein; Sc_2 before the middle of Sc_1; abdominal sclerites margined with yellow (female); coxæ yellow; Alaska. 11. *beringensis*.

gg. With other combination of characters.

h. Costa produced at least 1-5 of distance from Rs to M_1.

i. Sc_1 ends in C distad of the base of Rs.

i. Coxæ black. 12. *Hopkinsii*.

jj. Coxæ yellow; Sc_2 distad of middle of Sc_1. 13. *sobria* n. sp.

ii. Sc_1 ends in C opposite or proximad of base of Rs; Sc_2 distad of middle of Sc_1.

j. Coxæ wholly grayish; claws in both sexes with basal tooth. Greenland. 14. *arctica*.

jj. Coxæ in large part yellow; one claw of each foot of male modified.
k. Abdomen with yellow fasciæ; palpi yellow; tarsi of female tumid. 15. *tricincta.*
kk. Abdomen black; palpi dark; fore tarsi about 1.75 times as long as the tibia. 16. *sciarina.*
hh. Costa but slightly produced.
i. Fore tarsus over twice, the metatarsus over .8 as long as the tibia.
j. Spurs pale. 17. *delicata* n. sp.
jj. Spurs dark. 7. *gracilis* n. sp.
ii. Fore tarsus less than 1.7, the metatarsus less than .75 as long as the tibia (female). 18. *obesula* n. sp.

aa. Subcostal crossvein (Sc_2) absent.
b. Subcostal vein ends distad of the base of Rs; costa noticeably produced; cubitus forks under or proximad of proximal end of crossvein. (Compare 12. B. Hopkinsii). 3. *obscura* n. sp.
bb. Subcostal vein ends at or proximad of the base of Rs; costa but slightly produced.
c. Fore tarsi not over twice, hind tarsi not as long as the tibia.
d. Subcosta ends nearly opposite the base of Rs.
e. Abdomen unicolored. 19. *inops.*
ee. Abdominal segments with yellow posterior margins (female). 19a. *inops* var. a.
dd. Subcosta ends proximad of the middle of the R-M crossvein. 20. *sedula* n. sp.
cc. Fore tarsi over twice, hind tarsi longer than the corresponding tibiæ. 21. *nacta* n. sp.

1. *Boletina abdominalis* Adams.

Kansas Univ. Science Bul. II. 24. 1903.

Male. Length 3.5 mm. Black, subshining; head and members black, except first antennal joint, which is tinged with yellow, middle ocellus very small; mesonotum black, subshining, covered with yellow pile, which are inclined to arrange themselves into rows, scutellum black, pile yellow, pleura black, without pile, metanotum black, halteres black; abdomen wholly black, subopaque, hypopygium with a yellowish tinge, pile yellow; legs yellowish, trochanters and tarsi, except base, largely fuscous; wings grayish hyaline, veins fuscous, subcosta joins the costa opposite base of Rs, subcostal crossvein slightly before the proximal end of the crossvein; furcation of the cubitus

is just distad of the same, and the furcation of the media is distad of the base of Rs. "Mo." April.

2. *Boletina parvula* Coquillett.

Proc. U. S. Nat. Museum. XXIII. 597. 1901 (Leptomorphus). *parvula,* Johannsen; Gen. Ins. Fasc. 93, 75. 1909. (*Boletina*).

An examination of the type showed that this species belongs to *Allocotocera* and not to *Boletina* as I formerly believed. *A. flavescens* is a synonym.

3. *Boletina obscura* n. sp.

Male. Length 3.5 mm. Black, including the head and all its parts, thorax, abdomen and coxæ; legs paler, femora light yellow, tibiæ slightly darker, spurs white, tarsi brown; wings hyaline, cinereous tinged, veins pale brown, venation as figured (Fig. 179); halteres yellow. Antennæ long, intermediate joints over twice as long as broad. Thorax dull, hairs including those of scutellum bright yellow on the mesonotum in 3 rows; abdomen subshining, its hairs as well as those of the coxæ, pale. Hypopygium dusky (Fig. 146). One claw on each of fore and middle foot, modified, scoop-shape, fluted and with serrate margin. Hampton, N. H., April and May (S. A. Shaw); Ithaca, N. Y.; Forest Hill, N. J., (Weidt), April.

Female. Differs in having the fork of the cubitus slightly more retracted, in having relatively slightly shorter fore metatarsus, and in having unmodified claws. Brookline, Mass. (C.W.J.)

In this species the subcostal crossvein (Sc_2) is frequently absent.

4. *Boletina cincta* n. sp.

Male. Length 4 mm. Head black, face, palpi, 3 or 4 basal joints of antennæ yellow; intermediate antennal joints about twice as long as wide. Thorax yellow, mesonotum with 3 confluent black stripes; scutellum and base of metanotum black; hairs yellow; scutellar setæ black. Abdomen yellow, the dorsum of 1, the whole of 5, 6, 7 and hypopygium (Fig. 147) and large basal triangular saddles on 2, 3 and 4, black. Coxæ and legs yellow, tarsi brownish, spurs yellow, trochanters black; each tarsal claw toothed at base. Wings hyaline, slightly smoky

toward the end of the costa; petiole of the media over twice as long as the crossvein (Fig. 180). Halteres yellow. Mt. Ascutney, Vt., July. (C.W.J.)

Female. With slightly shorter fore metatarsi; abdominal segments 2, 3, and 4 black, with posterior 1-3 of each segment yellow; ventral sclerite of ovipositor twice as long as the distal joint. Old Forge, N. Y. July. (J.G.N.)

5. *Boletina melancholica* n. sp.

Male. Length 4 mm. Head black, palpi and antennæ brown, intermediate joints of the latter about 3 times as long as broad, base of joint 3, yellowish. Thorax and abdomen wholly black, hairs yellow. Hypopygium black, resembles that of *obscura,* but forceps (Fig. 149) and median ventral lobe (Fig. 148) differ. Coxæ and legs yellow, tarsi brown, trochanters black, tibial spurs pale yellow; all claws scoop-like, fluted and with serrate margin. Wings hyaline, veins yellowish (Fig. 181). Halteres yellow, Dubois, Wyo., Sept. (W.M.W.)

Female. Intermediate antennal joints about twice as long as wide; venter and abdominal tergites with pale brown margins; ovipositor yellowish. Jackson Lake, Wyo., Sept. (W.M.W.)

6. *Boletina imitator* n. sp.

Male. Length 6 mm. Head brown, face, palpi and 4 basal joints of antenna yellow, intermediate antennal joints about 3 times as long as broad. Thorax yellow, the 3 stripes on the mesonotum brown, the scutellum and the metanotum largely brown; hairs yellow. Abdomen dark brown, venter paler; hypopygium as shown (Fig. 150). Coxæ and legs yellow, the trochanters, tarsi and tibial spurs, brown; tarsal claws all alike, toothed at base. Wings hyaline, veins dusky yellow (Fig. 182). Halteres yellow. Longmire's Springs, Mt. Rainier, Wash. August. (J.M.A.)

7. *Boletina gracilis* n. sp.

Male. Length 6.5 mm. Head black, pruinose, face and antennæ brown, palpi yellow, basal joints brown; intermediate antennal joints about 3 times as long as broad. Thorax dusky yellow, mesonotum with 3 broad dull black stripes, scutellum, metanotum and sternum and sometimes the pleura largely dark

brown; hairs yellow. Abdomen brown, base of hypopygium and claspers (Fig. 151) dusky yellow. The hypopygium is figured in Genera Insectorum, Fascicle 93, Plate 7, Fig. 9. Coxæ and flexor surface of femora and tibia yellow, other parts of legs including spurs brownish, trochanters blackish; claws all similar, slender but slightly curved, basal tooth small. Wings hyaline, grayish tinged, veins dusky yellow. (Fig. 183). Halteres yellow, apex of knob brownish. Cal., Aug., (J.C.B.); Two-gwo-tee-e Pass, Wyo., Sept. (W.M.W.)

Female. Similar, but the yellow of the thorax is confined to the humeri. Ovipositor paler brown, the lobes yellow. Wyo.

8. *Boletina longicornis* n. sp.

Male. Length 4.5 mm. Head and face dark brown; palpi, the scape and the base of the first flagellar joint, yellow, remainder of flagellum brown; intermediate segments over 5 times as long as wide. Thorax dusky yellow, the 3 dorsal stripes dark brown; the scutellum, the metanotum and the lower half of the pleura, brownish; hairs yellowish. Abdomen dark brown, the posterior margin of the intermediate sclerites yellow; hypopygium as figured (Fig. 152). Coxæ and femora yellow, the apical half of the former and the tibia dusky yellow, the tarsi and the tibial spurs brownish; tarsal claws all similar, each with basal teeth. Wings hyaline, grayish tinged, veins dusky yellow (Fig. 184). Halteres yellow. Moscow, Id., April. (J.M.A.)

9. *Boletina notescens* n. sp.

Male. Length 5 mm. Head dark brown, face, mouth parts, and basal 1-3 of antennæ yellow, apical part of antenna brown; intermediate joints scarcely twice as long as broad. Thorax yellow, the 3 dorsal stripes reddish. Abdomen pale brown, posterior segments darker, venter and posterior margins of the intermediate dorsal sclerites yellowish; hypopygium pale brown resembling that of *B. imitator* but shorter in proportion to the width, and with shorter and stouter forceps (Fig. 153). Coxæ and legs yellow, trochanters blackish, tarsi, and tibial spurs brown; claws all similar, each with one strong and several minor basal teeth. Wings grayish, hyaline; veins dusky yellow (Fig. 185). Halteres yellow. Ithaca, N. Y. June.

In another specimen from Massachusetts the face, basal portion of each abdominal tergite and thoracic stripes are dark brown but otherwise does not differ. It is possible that the Ithaca specimen is teneral.

Female. Similar to the Massachusetts specimen in coloring.

Var. a. Female. Similar to the foregoing but abdomen is wholly black. Mt. Greylock, Mass., June. (C.W.J.) Ovipositor is shown in Fig. 161.

Var. b. Female. Similar to Var. a. but the subcostal vein is produced a little distad of the base of Rs. Friday Harbor, Wash. (J.M.A.)

10. *Boletina grœnlandica* Stæger.

Naturh. Tidsskr. I. 356. 1845.

Male and female. Length 5 mm. Head and palpi blackish; antennæ of the male over twice as long as the thorax, immediate base of joint 3 reddish, remaining joints fuscous. Thorax and abdomen blackish, abdomen of the female with posterior margins of segments 2-6 yellow. Halteres pale. Legs yellow, posterior coxæ, and all trochanters and tarsi blackish; tibiæ testaceous, spurs yellow; posterior femora blackish at apex. "Greenland."

11. *Boletina beringensis* Coquillett.

Diptera of Commander Isl. 342. 1898.

Female. Length 4.5 mm. Head black, opaque gray pruinose, antennæ blackish brown, the second joint yellow, proboscis blackish brown; palpi yellow; thorax, scutellum and abdomen black, the hairs yellow, mesonotum marked with 3 black vittæ, posterior margins of the abdominal segments 2 to 6 and the genitalia yellow. Coxæ, femora and tibiæ yellow, the trochanters black; tarsi except the base, brownish black. Wings hyaline, the costal cell yellowish, veins yellow, the basal third of M_2 colorless; tip of Sc_1 slightly before base of Rs, Sc_2 a short distance before the middle of Sc_1; M and Cu forking slightly before the base of Rs, the forking of M more proximal than that of Cu; anal vein extending a short distance beyond the forking of Cu. Halteres yellow. "Bering Isl." July-Aug.

12. *Boletina Hopkinsii* Coquillett.

Canadian Entomologist. XXVII. 200. 1895. (Mycetophila).

Male. Length 4 mm. Black, the thorax and abdomen subshining, not pollinose; halteres, femora, tibiæ and base of metatarsi dusky yellow. Antennæ twice as long as head and thorax united, densely short, white pubescent. Thorax and scutellum sparse, coarse, golden yellow pilose, abdomen fine yellowish white pilose. Front tibiæ destitute of stout bristles except at the tip, the middle and hind ones bearing numerous black bristles. Wings gray, unmarked; Sc_1 ending in the costa slightly beyond the base of Rs; media forks the length of the crossvein beyond the latter; cubitus forks opposite the proximal end of the crossvein; anal vein scarcely reaching beyond the middle of Cu_2; costal vein reaches the first third of distance between tips of Rs and M_1. "Morgantown, W. Va."

A single male specimen from Hampton, N. H. (S. A. Shaw) which may be this species or else an abberant specimen of *B. obscura* has Sc_2 very indistinct, proximad of the middle of Sc_1, the petiole of the media but little longer than the crossvein and the fork of the cubitus slightly distad of the proximal end of the crossvein.

13. *Boletina sobria* n. sp.

Female. Head, thorax and abdomen brownish black, slightly pruinose; lamellæ of ovipositor, palpi and flagellum of antennæ brown, the intermediate joints of the latter not twice as long as wide; body hairs yellowish. Coxae and legs yellow; trochanters blackish, tarsi brown; spurs pale yellow; claws each with 4 or 5 basal teeth, those of hind claws more minute. Wings grayish hyaline, veins dusky yellow (Fig. 186). Halteres yellow. Longmire's Springs, Mt. Rainier, Wash. August. (J.M.A.)

14. *Boletina arctica* Holmgren.

Oefv. Vetensk. Akad. Forh. 105. 1872.

Male and female. Length 4-5 mm. Blackish, subopaque; thorax cinereous with 3 black stripes, the middle one geminate; furrow below the humeri pale; antennæ wholly blackish; palpi fuscous, yellowish apically; abdomen blackish. Wings hyaline, anterior veins dusky; fork of the cubitus more retracted than

that of the media. Halteres and legs yellowish, coxæ cinereous, tarsi fuscous. "Greenland."

Rübsaamen (in Bibliotheca Zool. XX. 104, '98) describing a specimen which he identifies with the above adds that the flagellar joints are distinctly longer than broad, the tarsal claws each have a basal tooth, and gives a figure of the wing in which Sc_1 ends proximad of the base of R_1; Sc_2 is distad of the middle of Sc_1; petiole of M slightly longer than the crossvein; costa produced far beyond tip of Rs, and cubitus forks under the petiole of the media. Hypopygium as figured (Fig. 154).

15. *Boletina tricincta* Loew.

Berlin. Ent. Zeitschr. XIII. 143. 1869.

Male and female. Length 3.2 mm., wing 3.2 mm. Head black, antennæ fuscous black, scape and base of the flagellum testaceous or subfuscous; palpi yellow. Thorax and abdomen shining black; abdominal sclerites 2-4 with yellow posterior fascia; venter except last 3 segments, yellow. Hairs yellow. Hypopygium small, similar to that of *B. dispecta* Dzied. but terminal appendages with 10 apical rays, and forceps differ (Fig. 157); lamellæ of ovipositor pale. Coxæ and legs yellowish, trochanters with fuscous spot, tibial spurs dusky yellow or pale; tarsi except the base fuscous; fore tarsi of the female tumid. Wings grayish hyaline, heavier veins fuscous. Halteres yellow. "Wis., Md."

The intermediate antennal joints not twice as long as broad; in the male one claw of the fore and middle feet, modified scoop-like, fluted and with serrate margin, the other claws sharp but with a serrate and scoop-like basal tooth; in the female each claw has a serrate basal tooth. Venation as figured (Fig. 187). Selkirk Mts., B. C. (J.C.B.); Me. and Mass. (C.W.J.); R. I. (J.B.); Wis. (W.M.W.); Ithaca, N. Y.; Brookside, N. J., (Weidt), July-Sept.

16. *Boletina sciarina* Stæger.

Kröger. Ent. Tidskr. 236. 1840.

Male and female. Length 3-4 mm. Wholly blackish brown; coxæ, femora, spurs and halteres yellow; tibiæ darker, tarsi brown; hind coxæ and sometimes the others also more or less brown. Antennæ of the male from 1.5-2 times as long as head

and thorax taken together; the fore tarsi about 1.75 times as long as the tibia, the fore tibia about 1.5 times as long as the metatarsi. Wings grayish hyaline with brown veins; costa produced far beyond the tip of Rs; petiole of the media about twice as long as the crossvein; Sc_2 distad of the middle of Sc_1; Sc_1 ends opposite the base of Rs; cubitus forks under the crossvein or sometimes opposite its proximal end. "Greenland and N. H."

According to Rübsaamen one claw of each foot is modified scoop-shape, fluted and with serrate margin. I have female specimens from Maine and New York which appear to belong here. According to a figure given by Dziedzicki the hypopygium resembles that of *B. obscura* but the forceps are differently formed (Fig. 156).

Some female specimens from California and Wyoming resemble this species but differ in having longer fore tarsi.

17. *Boletina delicata* n. sp.

Male. Length 3 mm. Head, including mouth parts, basal antennal joint black (flagellum broken). Thorax and abdomen black, subopaque, with yellow hairs. Hypopygium black, resembling that of *obscura* but with different forceps (Figs. 159, 160) and terminal appendages (Fig. 158). Coxæ, femora, tibiæ and tibial spurs yellow, tarsi brownish; claws broad, digitate, digits contiguous, outer digit shorter and free. Wings grayish hyaline, veins dusky yellow (Fig. 188). Halteres yellow. Jackson Lake, Wyo., Sept., (W.M.W.)

18. *Boletina obesula* n. sp.

Female. Length 5.5 mm. Head, including mouth parts, and antennæ, black; intermediate antennal joints about twice as long as broad. Thorax black; abdomen dark brown with posterior margins of both dorsal and ventral sclerites of segments 3 and 4, and lamellæ of ovipositor, yellow. Immediate base of fore, basal 2-3 of middle and hind coxæ, and trochanters dark brown; femora and tibiæ yellow, tarsi brown; tarsal claws all similar, with basal teeth. Wings grayish hyaline, anterior veins strong, dark. (Fig. 189). Head of Tsirku River, Alaska, July-Aug., (O. M. Leland).

19. *Boletina inops* Coquillett.

Proc. Washington Acad. Sc. II. 391. 1900.

Male and female. Length 4.5 mm. Black, the second joint of antennæ and base of the third, the palpi, halteres, coxæ, femora and male hypopygium yellow, tibiæ brownish yellow; hairs of body yellow; thorax subopaque, thickly gray pruinose; abdomen subopaque; bristles of inner side of middle tibiæ slightly shorter than the diameter of each tibia; wings hyaline, tip of the subcosta slightly before the base of the radial sector, subcostal crossvein wanting; media forking slightly beyond, the cubitus about opposite to base of radial sector; third joint of antennæ twice as long as wide; hypopygium of male at least 1-2 longer than the longest segment of the abdomen preceding it. "Yakutat and Orca, Alaska."

Var. a. A single female specimen from Moores Lake, Idaho, differs in having brownish hind coxæ and abdominal segments except the first with yellow posterior margins. Wing venation as figured (Fig. 190). The leg measurements given on page 324 are of this specimen.

20. *Boletina sedula* n. sp.

Male and female. Length 3.5 mm. Head black, gray pollinose, antennæ dark, 3 basal joints yellow, intermediate joints over twice as long as wide, palpi yellowish. Thorax and abdomen black, gray pollinose, the abdomen subshining, hairs yellow. Hypopygium black, resembling that of *B. gracilis*. Coxæ and legs yellow, tarsi infuscated, spurs black; claws unmodified, each with strong tooth near the base. Wings 4 mm. long 3.6 times as long as the fore tibia; hyaline, veins yellowish brown; venation as figured (Fig. 191). Halteres yellow. Longmire's Springs, Mt. Rainier, Wash., August (J.M.A.). In the female the fork of the cubitus is a little proximad of fork of the media.

21. *Boletina nacta* n. sp.

Male and female. Length 3.5 mm; wings 4 mm. Head and its parts black, intermediate antennal joints about 3 times as long as wide. Thorax and abdomen black subopaque, hairs yellow; hypopygium black, similar to that of *B. gracilis* but forceps differ. (Fig. 155). Coxæ and legs yellow, the bases of hind coxæ and the trochanters black; tarsi infuscated; spurs

yellow; claws unmodified, each toothed near the base. Wings 3.75 times as long as the fore tibia; hyaline, veins yellowish brown; venation as figured (Fig. 192). Halteres yellow. Two-gwatee-e Pass, Wyo., Sept. (W.M.W.). In one specimen from Black Rock Creek, Wyo., the subcosta ends opposite the base of Rs.

11. *Genus Leia* Meigen.

System. Beschr. I. 258. 1818.

Lejomya Rondani, Prodr. 1, 195. 1856.

Glaphyroptera Winn. Verh. Zool.-bot. Ges. XIII. 781. 1863.

Neoglaphyroptera. O. S. Catl. Dipt. N. A. 10. 1878.

Eyes oval, ocelli 3, the laterals large, rather close though not contiguous to the eye margin, the middle one rarely absent. Legs moderately strong, setæ of fore legs rather delicate; those on the extensor surface of middle and hind legs stout. Wings elongate oval; subcosta ends in the costa at one-fourth or one-third the wing length from the base and is connected with R_1 by Sc_2 near its apex; the basal cell R is very long, extending beyond the middle of the wing; the media usually forks noticeably before the base of the radial sector; the cubitus forks proximad of the proximal end of the R-M crossvein, its anterior branch is sometimes slightly disconnected at the base; anal vein stout, incomplete. The larvæ live in mushrooms.

Table of species.

a. Thorax largely black, not vittate, humeri and anterior margin may be yellow, wing fasciate.

b. Fore part of thorax yellow, head black between the eyes, wings with preapical fascia and a dash behind Cu_2 but no discal mark. 1. *varia*.

bb. Thorax not yellow anteriorly except sometimes the humeri.

c. Scutellum, vertex, and occiput yellow; Mexican. 2. *punctata*.

cc. Scutellum black.

d. Halteres wholly yellow.

e. Costa produced about 1-10 of distance from Rs to M_1. 3. *melaena*.

ee. Costa not produced.

f. Preapical wing band lies beyond the middle of cell Rs and nearly fills apex of the wing. 4. *nigra* n. sp.

ff. Preapical wing band nearly reaches the base of cell M_1. 4a. *nigra* var. a.

dd. Knob of halteres blackish.
e. Brown spot on wing at origin of the crossvein; proximal abdominal segments yellow anteriorly; pleura yellow anteriorly. St. Vincent Isl. 5. *nitens.*
ee. No brown spot at origin of the crossvein; proximal abdominal segments wholly black; Eastern U. S. 6. *ventralis.*

aa. Thorax largely yellow, or if not then at least distinctly yellow between the dorsal vittæ.
b. Mesonotum shining black except humeri and two slender converging yellow lines on each side of a wedge-shaped black median vitta.
c. Venter yellow, dorsum mainly black. 7. *cuneola.*
cc. Abdomen almost wholly black; female; Mexico. 8. *amabilis.*
bb. Mesonotum not so marked.
c. Thorax with 3 distinct dark brown, longitudinal vittæ, middle one sometimes divided; wing with fasciæ or spots.
d. A brown cloud near apex of wing distad of the preapical fascia. 9. *Winthemii.*
dd. No cloud on wing distad of the preapical fascia.
e. Hind coxæ and femora yellow. 10. *striata.*
ee. Hind coxæ and femora largely black. 11. *lineola.*
cc. Mesonotum spotless, or with only 3 reddish stripes, or with black spots on each side at base of wing.
d. Without conspicuous black spot on each side at base of wing.
e. Wing unmarked.
f. Abdomen yellow. 12. *unicolor.*
ff. Abdomen fasciate.
g. Thorax with 3 reddish brown vittæ; fore metatarsus shorter than the tibia. 13. *plebeja* n. sp.
gg. Thorax yellow; fore metatarsus as long as the tibia. 14. *hyalina.*
ee. Wing fasciate.
f. Wing with brown spot at base of crossvein.
g. Hairs of thorax yellow, setæ darker; species from the United States.
h. Crossvein shorter or not longer than the apical part of R_1. 15. *oblectabilis.*
hh. Crossvein longer than apical part of R_1. 15a. var. of *oblectabilis.*
gg. Hairs and thoracic setæ black; species from West Indies. 16. *concinna.*
ff. Wing without brown spot at base of crossvein. 17. *dryas* n. sp.
dd. Mesonotum yellow with shining black spot, large or small, on each side in front of the base of the wing.
e. Wing unmarked, hyaline.
f. Pleura and metanotum black. 8. *amabilis.*

ff. Anterior part of pleura and center of metanotum yellow. 18. *cincta.*

ee. Wing with preapical fascia.

f. Middle ocellus wanting; no cloud at proximal end of the crossvein. 19. *decora.*

ff. Middle ocellus present and frequently surrounded by black.

g. Wing with a distinct brown cloud at the proximal end of the crossvein; lateral thoracic spots large. 20. *opima.*

gg. Wing without distinct cloud at proximal end of the crossvein.

h. Thoracic spot at base of wing, small, punctiform, not extending down over the metapleural lobes; abdominal fasciæ usually produced forward on the middle line. 21. *sublunata.*

hh. Thoracic spot at base of wing large, produced over the metapleural lobes; abdominal fasciæ usually emarginate, sometimes divided, rarely produced. 22. *bivittata.*

Leia miocenica Cockerell (Bul. Am. Mus. N. Hist. 76. 1911) is a fossil from the Miocene shales of Florissant, Colorado.

1. *Leia varia* Walker.

List of Diptera, Brit. Museum. I. 93. 1848.

Length 3.5 mm; of wings 8 mm. Body yellow; head black between the eyes, which, and the feelers are also black; the latter are yellow at the base; chest except the fore part, black; segments of the abdomen bordered with black, which color extends partially along the sides of the segments; legs yellow; hips and thighs much paler than the shanks and feet; wings colorless, each with a broad, brown irregular and interrupted band near its tip; veins brown.

To the above may be added that the upper half of the pleura, the scutellum, metanotum and last abdominal segment are brownish to black, the halteres are yellow and wings as figured (Fig. 193). "Canada;" Wis., and Wyo., (W.M.W.).

2. *Leia punctata* Bellardi.

Saggio di Ditterol. Messicana, Append. 202. 1861.

Male. Length 4 mm. Black, shining. Lateral ocelli large, black; median small, black; vertex and occiput yellowish, shining; antennæ black; the first two joints and the under side of

the third and fourth, yellow, the tip white; face and palpi yellow. Thorax wholly blackish, bare, shining; pleura black, each with yellow median spot; scutellum yellow; metathorax shining black. Abdomen black; genitalia yellow; venter yellow, blackish toward the base. Coxæ yellow, bare, at apex bipunctate; femora yellow each with black spot at base, blackish above; tibia yellow; tarsi fuscous; first joint yellow toward the base. Wing iridescent; with preapical spot. The figure shows the wing spot extending back into the base of the fork of the media.

"Tuxpango, near Orizaba, Mexico."

3. *Leia melæna* Loew.

Berlin. Entomol. Zeitschr. XIII. 144. 1869.

Male. Length 3 mm; wing 3.8 mm. Black, shining, with yellowish pile. Head black, face yellow; palpi pale yellow, antennæ black, 3 basal joints yellow. Thorax black, humeral triangle whitish. Abdomen black, pile yellow, hypopygium black (Fig. 162), black pilose. Coxæ and legs pale yellow, tip of each posterior femur blackish, apical joints of hind tarsi infuscated, hind tarsi a little shorter than the tibiæ. Wing proportionately long, hyaline; with wide preapical fascia which is more dilute toward posterior margin; a brown cloud behind Cu_2 (Fig. 194). Costa slightly produced beyond the tip of Rs. Halteres yellow.

"New York;" R. I., (J.B.).

4. *Leia nigra* n. sp.

Male. Length 4 mm. Head shining black, face pruinose, antennæ black, scape and palpi yellow. Thorax shining black, faintly pruinose in oblique view, setæ black, fine hairs yellowish. Abdomen shining black, hairs yellowish; intermediate ventral sclerites narrowly margined with yellowish, hypopygium black (Fig. 163). Coxæ, femora and tibial spurs yellow, tibiæ and metatarsi dusky yellow, remaining tarsal joints brown; setæ of tibiæ and tarsi and of apex of coxæ black. Wing white hyaline, preapical fascia does not cover the basal half of cells R_1 and M_1 (Fig. 195). Halteres yellow. Pullman, Wash., (J.M.A.).

Female. Differs in having black pile on thorax and abdomen; yellow fasciæ of ventral abdominal sclerites less extended, and tibiæ more brownish. Midvale, Montana (C. E. Brown).

Var. a. Female. Length 3.5 mm. Hairs of thorax and abdomen yellowish. Wing fascia is produced proximad in cell M_1 nearly reaching the fork. Little Wind River, Wyo., (W.M.W.), Sept. Represented by but a single specimen. It may be a distinct species.

5. *Leia nitens* Williston.

Trans. Ent. Soc. London. 259. 1896.

Male and female. Length 4 mm. Mesonotum shining black; wings infuscated. Front black or blackish, yellowish on the lower part; face yellow; antennæ blackish, the basal joints yellowish, about as long as the thorax. Mesonotum, scutellum, and metanotum shining black, the bristles of the same color; pleura yellow in front; reddish-brown behind. Abdomen slender; shining black or deep brown, the proximal segments in front yellow or yellowish; venter yellow. Tuberculum of halteres black. Coxæ yellow; femora nearly the same color; hind femora at the tip blackish; tibiæ brownish yellow; tarsi brown; front tibiæ shorter than the metatarsi; middle tarsi nearly a half longer than their tibiæ; hind tibiæ and tarsi of nearly equal length. Wings infuscated, the apex tinged with blackish; a brown spot at the origin of the crossvein. Middle and hind tibiæ with stout spurs. In some specimens the face is brown, the front wholly black, the posterior part of the pleura and greater part of abdomen, black. "St. Vincent Isl."

6. *Leia ventralis* Say.

Long's Exped. to St. Peter's River. App. 364.

Male and female. Length 3.5 mm. Head black; antennæ brown, 3 basal joints and the palpi yellow. Thorax and abdomen shining black, venter with segments 3 and 4 largely yellow; hairs pale. Coxæ, femora, tibiæ, and metatarsi yellow; remainder of tarsi brown; tip of each hind femur blackish; tibial spurs yellow. Wings whitish hyaline, the broad preapical band nearly reaches the base of the fork of the media. (Fig. 196). Halteres yellow with black knob. "North West

Terr.;" Mt. Ascutney, Vt., (C.W.J.); Traveler's Mt., Me., (J. A. Cushman), July.

7. *Leia cuneola* Adams.

Kansas Univ. Science Bul. II. 25. 1903 (Neoglaphyroptera).

Female. Length 4 mm. Yellow, shining; vertex with a transverse black line, occiput with a reddish cast and sparse yellow pile, antennæ, except base, dark brown; mesonotum with 3 shining black stripes, the 2 lateral ones nearly as broad as long, the middle one wedge-shaped, scarcely reaching the middle of the dorsum, pile yellow, scutellum yellow, with 2 long yellow bristles; pleura black, yellow above anterior coxæ, metanotum black, halteres yellow; abdomen shining black, except narrow lateral margins, apex and venter, which are yellowish, pile very short and yellow; legs yellow, a small spot on trochanter, extreme tip of posterior femora, of tibiæ, and tarsi in large part, fuscous; wings hyaline, a brownish fascia traversing the wing, starting about midway between tip of first vein and apex of wing. (Fig. 197). "Colo., August." Pollock, Ida. (J.M.A.) July.

8. *Leia amabilis* Williston.

Biolog. Centr. Amer. I. Suppl. 219. 1900 (Neoglaphyroptera).

Male. Length 4 mm. Head yellow. Antennæ longer than the head and thorax together; black, the scape and first 3 or 4 joints of the flagellum yellow. Thorax yellow, mesonotum with a large, deep, shining black spot on each side, leaving a narrow median stripe and front part yellow. Metanotum and mesopleura shining black; immediately subjacent to the root of the wings the color is blackish. Abdomen brownish-black, with the anterior margin of each segment and the venter yellow. Legs yellow; the tip of the hind tibiæ and the tarsi brownish; front tarsi nearly 2.5 times the length of the tibiæ; the tibiæ hardly longer than the metatarsi. Wings lightly tinged with brownish; Cu_1 separated at its origin from the vein.

Female. Head above black. The yellow of the mesonotum has an elongated black spot or stripe in the middle, narrowed to a point, and separated from the same color of the sides by a slender, curved, yellow stripe, posterior half of the pleura black. Wings with a brownish crossband distally. Abdomen almost wholly black. "Mexico."

In one male (from Medellin) the abdomen is yellow, with large black spot on each side of the segments, except the sixth; hypopygium is also black. In one female (from Orizaba) the median spot of mesonotum is absent and the fascia of the wing is obsolete.

9. *Leia winthemii* Lehmann.

Ins. Spec. in agro Hamb. captæ. 39. 1822.

Male and female. Length 4.5 mm. Head dusky yellow, face and palpi pale yellow, 3 basal joints and under side of joints 4 and 5 reddish yellow. Thorax yellow, with 3 stripes on mesonotum of which the middle one is geminate, the center of the scutellum, the middle of the metanotum, and posterior margin of metapleural lobes, brownish black; hairs pale; setæ brownish. Tergites brown, bases of all but the first broadly yellow, the brown produced forward on the middle line; venter and hairs yellow; hypopygium yellow, the ventral appendages black (Fig. 164). Coxæ and legs yellow, apices of trochanters, of hind femora, black, tarsi infuscated; spurs dusky yellow. Wings hyaline with brown markings as figured (Fig. 198). Halteres yellow. Maine; N. Y.; Wis., (W.M.W.); Oregon and Washington (J.M.A.); "Canada; N. H."

10. *Leia striata* Williston.

Kansas Univ. Quart. II. 60. 1893. (Neoglaphyroptera).

Male. Length 5 mm. Head yellow, the occiput somewhat brownish; antennæ brown, the basal joints yellow. Thorax yellow; mesonotum with 4 brown stripes, the median ones narrower, narrowed posteriorly and separated by a slender line, the lateral ones abbreviated in front; metanotum brown; bristles of the mesonotum well developed, as are also those of the trichostical row. Abdomen black, the anterior part of the segments yellow or brown. Legs yellow, tip of the hind femora and tibiæ and all the tarsi brown; front metatarsi as long as the tibiæ. Wings yellowish hyaline; an irregular brown band across the outer part, and brown spots on the crossvein and on Cu_2; anal vein incomplete; the subcosta terminates about opposite the furcation of the cubitus, and the subcostal crossvein is situated beyond its middle; the R-M crossvein longer than the last section of R_1. "Washington."

Var. a. A number of specimens resemble both the above and the following species (*L. lineola*) in most particulars, differing from the former and resembling the latter in the pleural marking; but differ from the latter in having hind coxæ and femora as in the former. In some specimens the head is marked as in the former while others are marked as in the latter. The forceps limb of a Wyoming specimen is shown in figure 165. The last section of R_1 is at least as long as the R-M crossvein (Fig. 199). The preapical wing band is broad except in the Carolina specimen. Sanford Univ. (J.M.A.); Marin Co. (Hy Edwards), Calif.; Little Wind River, Wyo., (W.M.W.); and N. C.

11. *Leia lineola* Adams.

Kansas Univ. Science Bul. II. 25. 1903. (Neoglaphyroptera).

Female. Length 4 mm. Differs from *L. striata* in the following particulars: The brown of the occiput is sharply defined, the center and sides being yellow; pleura with a brown spot anterior to and above the middle coxæ, metapleura above hind coxæ brown; the last 2 abdominal segments almost wholly yellow; all trochanters, the posterior coxæ and femora black, the latter with a narrow longitudinal line on the inner and outer sides, yellow; the brown crossband on outer part of wing is much broader. "Karn Co., Calif."

12. *Leia unicolor* Walker.

List of Diptera, Brit. Museum I. 93. 1848.

Body tawny; head reddish brown above; feelers and eyes black; the former tawny at the base; palpi yellow; hips and thighs yellow, shanks and feet dull tawny; wings colorless; veins brown; poisers yellow. Length of the body 5 mm., of the wing 10 mm. St. Martin's Falls, Albany River, Hudson's Bay.

Whether the species belongs to this genus cannot be determined from the description.

13. *Leia plebeja,* n. sp.

Male and female. Length 3.5 mm. Length of wing 3 mm. Pale reddish yellow; antennæ robust, longer than the head and thorax, six or seven apical joints somewhat infuscated; face and

palpi pale; ocelli narrowly margined with black; thorax with a rufous tinge, its dorsum shining, covered with yellowish hairs interspersed with a few black ones and crossed by 4 longitudinal pale rufous bands, the 2 median of which are approximated and extend from the anterior almost to the posterior edge, while the 2 latter are broader and abbreviated before and behind. Scutellum broad and short, pale yellow, with 4 long pale bristles inserted on the posterior margin. Metanotum fuscous; pleura reddish yellow, slightly tinged with fuscous at the insertions of the posterior coxæ. Abdomen pale reddish yellow; the posterior third or half of each segment deep fuscous, or black; hypopygium yellow with blackish appendages (Fig. 166). Legs pale yellow throughout, tarsi but very slightly infuscated toward their tips. Spurs yellow. Halteres pale yellow. Wings grayish hyaline, immaculate, yellowish towards their bases and along their costal margins; veins yellowish (Fig. 200). Lawrence, Kas. (J.M.A.). Also a single specimen from Wisconsin with the MS name *plebeja* (W.M.W.).

14. *Leia hyalina* Coquillett.

Journal N. Y. Ent. Society XIII. 68. 1905. (*Lejomya*).

Length 4 mm. Yellow, the antennæ except at base, a spot on the front, 3 spots on the pleura, middle of metanotum, hind margins of abdominal segments, also apices of tarsi, black. Body polished, the short hairs yellow, the longer hairs and bristles of mesonotum and scutellum chiefly brown. First joint of front tarsi as long as the tibiæ. Wings hyaline, upper branch of cubitus usually interrupted at the base. "Las Vegas Hot Springs, N. M."

15. *Leia oblectabilis* Loew.

Berlin. Ent. Zeitschr. XIII. 146. 1869. (*Glaphyroptera*).

Female. Length 2.9 mm; wing 3 mm. Head yellow, palpi and antennæ paler, the latter darker toward the tip; ocelli black. Thorax wholly yellow, pile yellow, the setæ darker. Abdomen yellow, tergites with black posterior fasciæ which are produced triangularly along the middle line, usually reaching the anterior margin in all but the first segment, sixth segment nearly wholly blackish; seventh short, tipped with yellow; venter yellow, sixth segment black or blackish. Legs pale yellow, tips of hind

femora black, spurs and tibiæ yellow, tarsi toward their apices subfuscous. Wings yellowish, tinged with cinereous, along the costa more yellow; preapical fascia wide, entire, slightly arcuate, fuscous spot at the proximal end of the crossvein and another below Cu_2 near its tip. Halteres yellow. "Middle States."

Male. Similar to female in coloring, but three thoracic stripes are feebly indicated. Hypopygium yellow (Fig. 167). Wing venation as shown (Fig. 201). Both sexes from N. C. (C.U.), Wis. (W.M.W.), Ohio and Ithaca, N. Y. July-Sept.

Var. a. Female. Differs from the foregoing in having the crossvein longer than the apical section of R_1, and in having narrower abdominal fasciæ which are not produced along the middle line. This specimen may represent a distinct species. Longmire's Springs, Mt. Rainier, Wash. (J.M.A.)

16. *Leia concinna* Williston.

Trans. Ent. Soc. London 259. 1896. (*Neoglaphyroptera*).

Female. Length 4 mm. Differs from *oblectabilis* as follows: Antennæ brown or blackish, the basal joints yellow; bristles and very short hair of the thorax black. Leg proportions as far as given by Williston are the same as for *oblectabilis*. "St. Vincent Isl., W. I."

17. *Leia dryas* n. sp.

Male and female. Length 3.5 to 4 mm. Pale yellow; each of the black ocelli surrounded by a narrow black border; antennæ scarcely as long as the head and thorax, growing fuscous on their apical half. Thoracic dorsum with sparse yellowish hairs among which are scattered a few black ones. There are traces of 3 or 4 longitudinal reddish bands. Scutellum concolorous with the thoracic dorsum; metathorax and postalar tubercle inclining to fuscous; a small black dot back of the insertion of each wing. Abdomen rather thickly covered with pale yellow hairs; the posterior fourth or third of each segment fuscous. Genitalia of male pale yellow. (Fig. 168). In the female the apical half of the abdomen, above and below, is fuscous. Legs paler than the thorax and abdomen; fore tibiæ less than half the length of the fore tarsi; apices of hind femora black; tarsi fuscous. Halteres pale yellow. Wings yellowish

gray, the yellow tint being very noticeable at the base and along the costal margin; veins pale yellow. A slightly crescentic fuscous band passes over the wing before the apex, growing paler as it nears the posterior margin. There is no fuscous margin to the anal veins (Fig. 202). Southeastern Wisconsin. Specimens bearing MS name *dryas* (W.M.W.).

18. *Leia cincta* Coquillett.

Proc. Acad. Nat. Sc. Phil. 308. 1895. (*Neoglaphyroptera*).

Male. Length 4.5 mm. Head, including the mouth parts, yellow, each ocellus situated on a black spot, the median very small; antennæ yellow on the 6 basal joints, the remainder blackish. Thorax, pleura and scutellum yellow, a large black vitta at base of each wing extending across the metanotum. Abdomen shining black, base of each segment and the whole of the sixth and seventh, yellow. Legs yellow, bristles of front tibiæ minute, those of the others large. Wings yellowish hyaline, unmarked; base of the radial sector slightly distad of the forking of the media. "Tick Isl. Florida."

A male specimen from Opelansas, La., and another from Wisconsin (W.M.W.) which I identify as this species have the center of the metanotum, and the venter of the abdomen, yellow. The hypopygium and the wing of the Louisiana specimen are shown in the figures. (Figs. 98, 203).

19. *Leia decora* Loew.

Berl. Ent. Zeitschr. XIII. 144. 1869. (*Glaphyroptera*).

Female. Length 3.5 mm; wing 3.3 mm. Head yellow; antennæ except the base subfuscous or fuscous; lateral ocelli margined with black, middle ocellus wanting. Thorax yellow, on each side near the base of the wing with a blackish spot; the setæ blackish, the pile yellowish; disk of the scutellum fuscous; metanotum with median fuscous vitta; lateral tubercles blackish. Abdomen yellow, the tergites widely and sharply margined with black, the last two segments dorsally and ventrally wholly black. Coxæ and legs pale yellow, apex of hind femora black, tibiæ and spurs yellow, tarsi nearly wholly blackish. Wings yellowish tinged with gray, toward the costa and base more yellowish, stronger veins fuscous; preapical fascia perpendicular, paler posteriorly, Cu_2 accompanied by a subfuscous cloud. "Georgia."

Specimens of both sexes taken June-September at Ithaca, N. Y., do not differ from the type in the museum at Cambridge. Hypopygium and wing as figured. (Figs. 99, 204).

20. *Leia opima* Loew.

Berlin. Ent. Zeitschr. XIII. 145. 1869. (*Glaphyroptera*).

Male and female. Length 3.8 mm.; wing 4.1 mm. Head yellow, vertex and upper half of occiput fuscous; antennæ fuscous, scape, first flagellar joint and palpi yellow. Thorax including scutellum yellow; dorsum shining, on each side with large, black, oval spot which is produced forward to the anterior third of thorax leaving only a narrow yellow vitta in the center; the metathoracic tubercles and the metanotum black. Pile yellow, on the darker parts, dusky. Abdomen largely black, the base of the second tergite and the anterior angles of the following ones, the hypopygium (Fig. 100) and the venter, yellow. Coxæ and legs pale yellow, extreme apices of hind femora black, tarsi except their bases, fuscous black. Wings dilutely cinereous, veins fuscous; the preapical fascia paler toward the posterior margin; a fuscous spot covers the base of the cross-vein and the petiole of the media; another spot is behind Cu_2 (Fig. 205). Halteres yellow. "Connecticut;" Wis. and Wyo. (W.M.W.); R. I. (J.B.); N. C. (W.B.); Mass. (C.W.J.); Maine; N. H.; N. J., (Weidt).

21. *Leia sublunata* Loew.

Berlin. Ent. Zeitschr. XIII. 145. 1869. (*Glaphyroptera*).

Female. Length 4.3 mm; wing 4.5 mm. Head yellow, ocelli margined with black, middle one minute; antennæ subfuscous toward the tip; palpi pale yellow. Thorax yellow; mesonotum on each side near the base of the wing and in front of it, with a small black spot, metathoracic lobes sometimes margined with subfuscous. Abdomen yellow, first and sixth tergite with narrow black margin; the 4 intermediate with wide fasciæ which are suddenly narrowed at the lateral margins; seventh wholly yellow; venter yellow. Coxæ and femora pale yellow; extreme tip of hind femur black; tibiæ and spurs yellow; tarsi except their bases, fuscous black. Wings yellowish, veins fuscous, toward the base in part yellowish; near the tip with a slender arcuate fascia; Cu_2 with a fuscous cloud behind it. "N. Y."

Male. Like the female in color characters. Wing and hypopygium figured (Fig. 101, 206). Ithaca, N. Y.; Brookside, N. J., (Weidt).

A female specimen from Pennsylvania has narrower abdominal fasciæ; one from B. C. has broader wing faciæ; one from N. C. (W.B.) has a faint cloud upon the crossvein and petiole of the media, and less distinct abdominal fasciæ.

22. *Leia bivittata* Say.

Jr. Acad. Nat. Sc. Phil. VI. 152. 1829.

Length 3.75 mm. Honey yellow; trunk bilineate, and tergum with 2 series of black punctures. Body rather pale honey-yellow; antennæ black at tip; stemmatæ very distinct, in a curved line; thorax a little hairy, on each side a dilated black vittæ; wings fasciate near the tip; tergum on each side with a series of oval black spots; coxæ white. "Indiana."

To the above may be added the following: Ocelli are margined with black; the lateral spots on the mesonotum are large, oval, shining black, connected posteriorly with a broad, sometimes somewhat interrupted, black stripe passing under the wing and covering the lateral lobes of the metathorax, sometimes the metanotum is also black. The tergites each usually have a broad transverse fascia which is deeply emarginate in front, sometimes wholly broken giving rise to the condition described by Mr. Say. Male and female are similar in coloring. (Fig. 207). Conn.; R. I. (C.W.J.); N. C. (F. Sherman and W.B.); Wis.; Ill. (W.M.W.); Kas.; Minn.; Iowa; Mich. (J.M.A.); Ithaca, N. Y.

12. *Genus Phthinia* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 779. 1863.

Ocelli 3, laterals widely remote from the eye margin. Thorax small, highly arched; abdomen long, filiform in the male, a little broader in the female. Legs very long and slender. Wings shorter than the abdomen; costa extends beyond the tip of the radial sector; subcosta ends in the subcosta; subcostal crossvein (Sc_2) present; petiole of the media very short; cubitus forks distad of the fork of the media and its branches are widely divergent. (Figs. 208, 209).

Table of species.

a. Fore metatarsus shorter than its tibia; moderately slender species with moderate or strong tibial spurs.

b. Subcostal crossvein (according to the figure) distad of the base of the radial sector (St. Vincent Is.). *Megalopalma.*

1. *fraudulenta.*

bb. Subcostal crossvein situated slightly distad of the middle of the basal cell; subcosta ends about opposite the base of the radial sector. 2. *curta* n. sp.

aa. Fore metatarsus over twice as long as its tibia; very slender and delicate species with weak tibial spurs. 3. *tanypus.*

1. *Phthinia fraudulenta* Williston.

Trans. Ent. Soc. London. 263. 1896.

Male. Length 2½-3 mm. Antennæ brown or blackish, the basal joints somewhat yellowish; the joints of the flagellum closely set together, somewhat compressed; front and face blackish. Mesonotum reddish-brown, shining, with black hair; pleura and coxæ yellow. Abdomen reddish brown or blackish, black at tip, venter yellow. Legs yellow, the tarsi brownish, becoming black at the tip, spurs of tibia stout; hind tibiæ with 2 rows of spines; front metatarsi distinctly shorter than their tibiæ; hind tarsi longer than their tibiæ. Wings tinged with blackish, due to the easily perceptible pubescence. "St. Vincent Isl." Williston. Judging from the figure this species belongs to Enderlein's new genus, *Megalopelma.*

2. *Phthinia curta* n. sp.

Male and female. Length 3 mm. Head black, mouth parts and basal joint of antenna yellow; the flagellum, two large spots on each pleuron, 3 stripes on mesonotum, the metanotum, abdomen, and tarsi pale brown, other parts yellow. The median thoracic stripe is wedge shape, contiguous to anterior margin, abbreviated posteriorly, the laterals are abbreviated anteriorly, converge posteriorly, nearly meeting at the scutellum. Fore metatarsus is about .8 as long as its tibia; tibial spurs of moderate size, those of the hind legs about as long as the 4th tarsal joint. Wings hyaline, grayish, veins brown, venation as figured (Fig. 208). Hypopygium (Fig. 102). Halteres yellow. Ithaca, N. Y.

3. *Phthinia tanypus* Loew.

Berlin. Ent. Zeitschr. XIII. 143. 1869.

Male and female. Length 6-6½ mm. Very slender, legs very delicate, much elongated. Head yellowish to subfuscous; antennæ fuscous, immediate base and scape, yellow; palpi yellow, dusky toward the tips. Thorax opaque, ferruginous to fuscous, pleura paler, dorsum not vittate; humeri and lateral line from the humerus to the base of the wing white pollinose. Abdomen slender, much elongated, fuscous black, each segment paler toward the base. Genitalia pale; hypopygium small. Coxæ and legs yellowish, apical half of each femur, the tibia and tarsi more dusky. Fore metatarsus about 2.4 times its tibia in length. Halteres yellow with dusky knobs. Wings saturate cinereous or fuscous cinereous tinged, veins fuscous black, in the female the wing membrane tinged along the course of the veins. (Fig. 209). "N. Y.," Montpelier, Vt. (C.W.J.); Old Forge, N. Y., (J.G.N.).

13. Genus *Sackenia* Scudder.

Bul. U. S. Geol. Survey. Terr. III. 753. 1877.

This fossil genus resembles *Boletina* from which it differs mainly in the wing venation. The subcostal crossvein is wanting, the radial sector is much curved, nearly reaching the apex of the wing and the anal vein appears to reach the margin. It is represented by *S. arcuata* Scudder (l. c.) and *S. gibbosa* Cockerell. The latter species has a shortened anal vein and may be therefore better included with Boletina.

14. Genus *Cœlosia* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 796. 1863.

Ocelli 3, laterals remote of the eye margin. Antennæ of the male elongate, the intermediate joints from 3 to 6 times as long as broad. Abdomen 6-segmented; slender and compressed in the male, clavate and somewhat depressed in the female; hypopygium large (Figs. 103, 104). Wings elongate oval; costa far produced beyond tip of the radial sector; subcostal vein ends in the costa at or beyond 1-3 the length of the wing; subcostal crossvein (Sc_2) wanting; media with short petiole; cubitus forks distad of the fork of the media. (Figs. 210-212).

Table of species.

a. Thorax yellow; not vittate; abdomen of the male with narrow dorsal, ventral and lateral longitudinal stripes; abdomen of the female, brown. 1. *flava.*

aa. Thorax dark. or else with dark stripes.

b. Thorax dark, not vittate, abdomen unicolored.

c. Third vein strongly bowed forward toward its apex; costal vein extends slightly over 1-2 way from apex of Rs to that of M_1; the media forking nearly 1-2 way between the crossvein and the fork of the cubitus; male. 2. *pygophora.*

cc. Costal vein but slightly produced. See *Boletina nacta.*

bb. Thorax yellowish or with distinct vittæ.

c. Abdominal segments with yellow posterior margins in the female, or with lateral spots in the male. 3. *flavicauda.*

cc. Abdomen unicolored.

d. Costa produced scarcely half way from the tip of Rs to that of M_1; wing hyaline. 4. *gracilis* n. sp.

dd. Costa produced fully half way from the tip of Rs to that of M_1; wing more or less cinereous.

e. Subcosta ends in the costa about opposite middle of R-M crossvein; veins margined with cinereous; female. 5. *lepida* n. sp.

ee. Subcosta ends noticeably distad of middle of the R-M crossvein; apex of wing more or less cinereous. 6. *modesta* n. sp.

1. *Coelosia flava* Stæger.

Kroyer's Tidsskr. Ent. 237. 1840. (Boletina).

Male and female. Length 4-4½ mm. Yellow, antennæ and tarsi darker, abdomen of the male with a slender dorsal, ventral and 2 lateral blackish lines; sixth segment wholly blackish; abdomen of the female sordidly brown. An European species said to occur also in the United States.

2. *Coelosia pygophora* Coquillett.

Proc. Entomol. Soc. Wash. VI. 170. 1904.

Male. Length 3 mm. Black, the first 2 joints of the antennæ, a large humeral spot, the hypopygium, halteres, coxæ, femora, tibiæ and bases of tarsi, yellow. Body thinly grayish pruinose, the hairs yellowish, the bristles on sides of thorax and the hairs of the hypopygium chiefly brown; hypopygium very large. Wings grayish hyaline, subcosta terminating in the costa slightly before the base of the radial sector; the radial sector strongly bowed forward toward its apex; costal vein ex-

tending slightly over half way from apex of Rs to that of M_1, the latter vein forking midway between the small crossvein and fork of the cubitus. "San Mateo Co., Cal."

3. *Coelosia flavicauda* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 798. 1863.

Male and female. Length 3.5 mm. Thorax yellow, with 3 confluent blackish vittæ; flagellum of the antenna, head, abdomen, and tarsi blackish, the basal antennal joints, palpi, lateral spots on segments, 2, 3 and 4 of the abdomen, and hypopygium in the male and posterior margins of the segments in the female, yellow. Wings hyaline scarcely tinged, veins brown, the radial sector slightly undulate. San Jose and Pacific Grove, Cal. (Aldrich).

4. *Coelosia gracilis* n. sp.

Male and female. Length 3.5 mm. Head black, mouth parts and basal antennal joints, yellow; flagellum fuscous. Thorax reddish yellow, with 3 black dorsal vittæ, the middle one geminate and wedge shaped, metanotum dusky. Abdomen fuscous; hairs yellow, hypopygium yellow. Legs yellow, tarsi darker, fore metatarsus about 3-4 as long as its tibia. Wings hyaline, veins dusky yellow, venation as figured (Fig. 210). Cal. (Bradley), Col. (W.M.W.).

5. *Coelosia lepida* n. sp.

Male and female. Length 3.5 mm. Head black, mouth parts and basal antennal joints yellow; flagellum fuscous. Thorax reddish yellow, with 3 black dorsal vittæ, the middle one geminate and wedge shaped; metanotum dusky. Abdomen pale fuscous; hairs yellow; hypopygium as figured (Fig. 103). See also plate 7, fig. 7 in Fasc. 93, Genera Insectorum. Legs yellow, tarsi darker, fore metatarsus about 3-4 as long as the tibia. Wings cinereous hyaline, the veins margined with cinereous. Halteres yellow. This species differs from *C. gracilis* in its wing venation; the costa being more produced, the subcosta shorter, and the veins more prominent (Fig. 211). Los Angeles (W.M.W.) and Palo Alta, Cal. (Aldrich).

6. *Coelosia modesta* n. sp.

Male and female. Length 3 mm. Head black, mouth parts and basal antennal joints yellow, flagellum fuscous. Thorax

reddish yellow, with 3 vittæ, spots on pleura and the metanotum black. Hairs yellow. Abdomen blackish; hypopygium (Fig. 104.) Legs yellow, tarsi dusky, fore metatarsus about 4-5 as long as the tibia. Wings hyaline with faint gray cloud on apex of wing extending to the cubitus, less marked in the female; venation as figured. (Fig. 212). This species differs from *C. gracilis* in having the costa more produced and in its apical wing cloud. Palo Alta (Aldrich), Berkeley, Cal., (W.M.W.).

15. Genus *Syntemna* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 767. 1863.

Ocelli 3 in number, subequal in size, laterals remote from the eye margin. Abdomen 7-segmented, cylindrical. Legs stout, of moderate length. Wings large; costa extends beyond the tip of the radial sector; subcosta either ends free, in which case the subcostal crossvein is present near the tip, or ends in R_1 beyond the middle of the basal cell; the media forks distad of the base of the radial sector; the cubitus forks proximad of the fork of the media (Figs. 213-215). The position of the ocelli will distinguish this genus from *Trichonta*. The position of the ocelli and the oblique position of the crossvein distinguishes it from *Docosia*.

Table of species.

a. Males.
  b. Antennæ long, third joint over twice as long as broad.
    c. Cubitus forks slightly distad of the crossvein; anal vein not much produced beyond the fork of the cubitus. 1. *rejecta* n. sp.
    cc. Cubitus forks far proximad of the crossvein. 2. *longicornis.*
  bb. Antennæ rather short, third joint but little longer than broad; cubitus forks proximad of the crossvein.
    c. Posterior margins of abdominal segments yellow.
      d. Anal vein extends at least a fourth of its length distad of the fork of the cubitus.
        e. Abdomen brown. 3. *vittata.*
        ee. Abdomen fasciate with yellow. 3a. *vittata* var. *fasciata* n. var.
      dd. Anal vein scarcely extends beyond fork of the cubitus; head black, cubitus forks only slightly proximad of the crossvein; fore metatarsus nearly 7-8 as long as its tibia. 4. *separata* n. sp.
    cc. Posterior margins of abdominal segments black; head yellow, cubitus forks far proximad of the crossvein. 5. *polyzona.*

aa. Females. Antenna short, third joint but little longer than broad; cubitus forks far proximad of the crossvein; anal vein extends far distad of the forks of the cubitus. 3. *vittata.*

Syntemna mutor Adams is identical with *Docosia dichroa* Lw.

1. *Syntemna rejecta* n. sp.

Male. Length 4 mm. Head black, face, palpi and basal joints of the antennæ, yellow; antennæ about twice as long as the thorax. Thorax yellow, two oval spots on the mesonotum over the base of the wing, dark brown, setæ, yellow. Abdomen yellow, the whole of the first segment except a spot on each side, and a fascia covering the basal 1-3 to 1-2 of each of the following segments, brown; hypopygium (Fig. 105); setæ and the finer hairs pale. Legs yellow, tarsi darker, setæ of hind tibiæ scarcely longer than the diameter of the tibia, fore metatarsus nearly 3-4 as long as the tibia. Wings hyaline, veins brown, venation as figured (Fig. 213). Halteres yellow. Blue Hills, Mass. July (C.W.J.).

2. *Syntemna longicornis* Coquillett.

Proc. U. S. Nat. Museum. XXIII. 597. 1901. (*Docosia*).

Male. Length 5 mm. Yellow, the front, vertex, antennæ except the 2 basal joints, 3 vittæ on mesonotum, dorsum of first abdominal segment except a spot on each side, a fascia at base of remaining segments and the genitalia, black; tarsi becoming brown toward their apices; antennæ more than twice as long as the head and thorax, the third joint over twice as long as wide; body polished, its hairs and those of the coxæ and femora yellow; wings hyaline, the subcosta ends slightly beyond middle of the basal cell, the R-M crossvein less than twice as long as first section of radial sector, cubitus forking before the crossvein. "N. H." (Coq.); Brookline, Mass., August (C.W.J.). In the Massachusetts specimen the median vitta is obsolete.

3. *Syntemna vittata* Coquillett.

Proc. U. S. Nat. Museum. XXIII. 597. 1901. (*Docosia*).

Male. Length 4 mm. Head black, mouth parts, and broad base of antennæ yellow, third joint of antennæ only slightly longer than broad; body polished, brown, a median vitta on the mesonotum, expanded at the front end and crossing the pleura, also middle of breast yellow, middle of metanotum reddish-yel-

low; hairs of thorax black; halteres and legs yellow, changing into brown at apices of the tarsi; bristles of hind tibiæ longer than the greatest diameter of the tibiæ; wings grayish hyaline, the cubitus forks far proximad of the forking of the media; anal vein reaching over 1-4 of its length beyond the forking of the cubitus. "N. H." (Coq.). The type of *vittata* has more or less yellow on the sides of the intermediate segments of the abdomen.

Female. A specimen from Friday Harbor, Wash. (Aldrich, Col.) has the thorax largely yellow, the pleura and large oval spots on the mesonotum above the base of the wings, brown. The other parts as described for the male. Venation as figured (Fig. 214). This may be a distinct species but until a male from the same locality is found it better be left here.

3a. *Syntemna vittata* var. *fasciata* n. var.

Male. Differs from *vittata* in having abdomen yellow, the whole of the first segment and the basal 1-3 of 1-2 of each of the following, dark brown; hypopygium (Fig. 106). Venation similar to that shown in Fig. 214. Eastport, Maine.

4. *Syntemna separata* n. sp.

Male. Length 3.5 mm. Head black; face, palpi and 5 basal joints of each antenna yellow; antennæ but little longer than the head and thorax. Thorax yellow, the pleura largely and 2 oval spots on the mesonotum over the base of the wing, dark brown, setæ black. Abdomen yellow, the whole of the first segment and a large fascia like spot nearly covering the basal half of each of the following segments, brown; setæ black, the finer hairs pale. Legs yellow, tarsi darker, setæ of the hind tibiæ longer than the diameter of the tibia, fore metatarsus nearly 7-8 as long as the tibia. Wings hyaline, venation as figured. (Fig. 215). Halteres yellow. St. Johnsbury, Vt., June, (C.W.J.).

5. *Syntemna polyzona* Loew.

Berlin. Ent. Zeitschr. XIII. 142. 1869.

Male. Length 3.8 mm. Head and its parts yellow, antennæ darker apically; ocellar spot black. Thorax and abdomen yellow, the segments of the latter posteriorly fasciate with black;

pile yellow. Legs yellow, tarsi darker. Wings tinged with yellow, the anterior veins darker. Halteres yellow, the knob dusky at base.

An examination of the type shows that the antennæ are short, the intermediate joints being but little longer than wide; that the cubitus forks far proximad of the crossvein and that the anal vein ends slightly distad of the R-M crossvein. "Middle states" (Loew); Brookside, N. J., (Weidt), Aug.

16. Genus *Megophthalmidia* Dziedzicki.

Horae Soc. Ent. Ross. XXIII. 525. 1889.

Ocelli 3, all large, the laterals widely remote from the eye margin. Thorax short, highly arched. Abdomen short, 6-segmented; hypopygium inflected under the abdomen. Legs stout, fore legs short. Wing oblong-oval; costa produced far beyond the tip of the radial sector; subcosta rather short, ending in R_1; the radial sector arises near the middle of the wing; petiole of the media long; cubitus forks proximad of the proximal end of the R-M crossvein which is nearly longitudinal in position; anal veins vestigial. (Fig. 216). Resembles *Docosia* but differs in the position of the lateral ocelli.

Megophthalmidia occidentalis Johannsen.

Genera Insectorum, Fasc. 93. 89. 1909.

Male and female. Length 2.5 mm. Head black; antennæ and proboscis brown; palpi yellow; the antennæ robust, about as long as the thorax, the intermediate joints cylindrical, shorter than broad, pilose; face setose. Thorax brownish yellow, including pleura, sternum, and scutellum; the metanotum more brownish, especially anteriorly. Setæ of the lateral and anterior margins of the thorax rather conspicuous; about 5 pairs of scutellar setæ, the longest about as long as the tibial spurs. Abdomen brownish yellow, appearing darker than the thorax because of the presence of black setulæ; apically somewhat darker; hypopygium as figured on Plate 7, Fig. 5 in Genera Insectorum, Fasc. 93; ovipositor yellow, conical, somewhat laterally compressed, the apices of the pointed lateral plates, with tuft of setæ. Legs, including coxæ, pale yellow, hind pair slightly darker; fore femora about as long as the coxæ, hind femora about twice as long; fore metatarsus over 1-2 as long

as the tibia; the black tibial spurs about 1-2 as long as the corresponding metatarsus; coxæ and femora with black setæ which are longer and more conspicuous on the outside near the tip; tibial setæ small; empodium very distinct; tarsal claws each with large tooth near base. Wings extend beyond tip of abdomen; hyaline, veins yellow; venation as shown (Fig. 216). Halteres yellow. Friday Harbor, Mt. Rainier, Wash., July and August. (Aldrich).

17. Genus *Docosia* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 802. 1863.

Ocelli 3, the middle one smaller, the laterals close to the eye margin. Thorax large, short; abdomen short. Legs strong, particularly the hind pair. Wings large, broad, longer than the abdomen; costa produced beyond the radial sector. Subcosta ends in R_1 or ends free; basal section of the radial sector nearly perpendicular in position, the second section in the same right line with the R-M crossvein which is longitudinal in position; base of fork of cubitus under or proximad of the fork of the media (Fig. 218).

Table of species.

a. Abdomen reddish yellow, thorax shining black. 1. ***dichroa.***

aa. Abdomen black.

b. Subcosta ends in R_1.

c. Media and cubitus fork about opposite the base of the radial sector; third antennal joint only slightly longer than broad. 2. *obscura.*

cc. Media and cubitus fork noticeably proximad of the base of the radial sector; third antennal joint about twice as long as wide. 3. *nigella* n. sp.

bb. Subcosta ends free, its basal section strong, apically much attenuated; legs mainly dark brown. 4. *nitida* n. sp.

For *D. longicornis* and *vittata* see *Syntemna.*

1. *Docosia dichroa* Loew.

Berlin. Ent. Zeitschr. XIII. 148. 1869.

mutor, Adams; Science Bul. Kas. Univ. II. 24. 1903. (*Syntemna*).

Male and female. Length 3-3.5 mm. Head and antennæ black, palpi fuscous or subfuscous. Thorax wholly black, shining. Abdomen reddish yellow in the male, the last two

segments and the hypopygium (pl. 7, fig. 11, Genera Insectorum, Fasc. 93) fuscous or black. Terminal appendage of lateral sclerite (Fig. 108). Legs including coxæ reddish yellow; tarsi largely infuscated; fore metatarsus over 1-2 as long as the tibia. Wings hyaline, anterior veins dusky; venation as shown (Fig. 218). "D. C.;" "N. J.;" (C.W.J.); "Mo." (*mutor*, Adams); Kas. (J.M.A.); Wis.; Mich.; Ithaca, N. Y.

2. *Docosia obscura* Coquillett.

Proc. U. S. Nat. Museum XXIII. 597. 1901.

Male. Length 3-3.5 mm. Black, the halteres and legs yellow, bases of coxæ, femora on base of under side, and the tarsi brown; third joint of antennæ only slightly longer than broad; body polished, the hairs yellow; bristles of hind tibiæ shorter than greatest diameter of the tibiæ; wings hyaline, veins brownish, subcosta ends in R_1, R-M crossvein at least 4 times as long as the base of the radial sector, media and cubitus fork opposite the base of the radial sector, anal vein almost reaching the fork of the cubitus. "White Mts., N. H." (Coq.). A defective specimen from Muir Woods, California, collected by Dr. J. C. Bradley probably also belongs here.

3. *Docosia nigella* n. sp.

Male. Length 4 mm. Black, the halteres, palpi, third antennal joint, and legs yellow, bases of the coxæ, under side and apices of the femora, and the tarsi brown; third antennal joint twice, the following joints about 3 times as long as broad; body polished, the hairs pale; bristles of hind tibiæ not longer than greatest diameter of tibia. One claw of each fore foot sickle shaped, with tooth proximad of the bend, the other claw smaller and with two teeth; fifth tarsal joint of fore foot enlarged. Wings hyaline, veins brownish, venation as figured (Fig. 219). Hypopygium (Fig. 109). Differs from *D. obscura* mainly in wing venation. Head of Tsirku River, Alaska, July-August, (Prof. O. M. Leland).

4. *Docosia nitida* n. sp.

Male and female. Length 2 mm. Black; the halteres and tibial spurs pale yellow, the fore femora, fore tibiæ and knees sometimes, brownish yellow; the tarsi and the other legs dark

brown, wings hyaline, anterior veins brownish; posterior veins pale, all other parts black; body shining, hairs pale, sparse. Antennæ short, intermediate joints not longer than broad. Setæ of hind tarsi shorter than diameter of tibia. Venation as figured (Fig. 220). Hypopygium (Fig. 110). Brookings, S. D. (J.M.A.)

18. Genus *Anatella* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 854. 1863.

Ocelli 3, the middle one smaller than the laterals, the latter continguous to the eye margin. Abdomen slender, compressed, constricted at the base. Legs long, spurs unequal. Wings elongate oval, anal lobe small; costa produced far beyond the tip of the radial sector; subcostal vein very short, ending in R_1; fork of the cubitus may be proximad, under or distad of the fork of the media; anal stout but incomplete (Fig. 217). Very small species.

A. tacita is a fossil species from Colorado.

Anatella silvestris Johannsen.

Genera Insectorum. Fasc. 93. 91. 1909

Male and female. Length 2.5 mm. Head brown, eyes black, antennæ yellowish brown, the 3 basal joints and the palpi pale yellow; antennæ about twice as long as the thorax. Thorax pale brown, with indications of 3 darker stripes; hairs pale, setæ black. Abdomen pale brown (venter yellowish in the female), apical margin of each of the four posterior segments dark brown; hypopygium yellowish (Fig. 107). Coxæ and legs pale yellow, tarsi infuscated; fore metatarsus and tibia subequal in length; tarsal claw elbowed, apical part slightly sinuous, curved at the tip; basal tooth very small. Wings hyaline, veins dusky yellow; venation as shown (Fig. 217). Halteres yellow. Ithaca, N. Y. March and August.

19. Genus *Trichonta* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 847. 1863.

Ocelli 3, the laterals large, close to the eye margin. Abdomen constricted at the base, compressed; hypopygium large. Wings large; costa scarcely noticeably produced beyond the tip of the radial sector; subcosta long, ending in R_1 beyond the middle of

the basal cell R; the cubitus forks proximad of the fork of the media (Figs. 221 to 223). Distinguished from *Syntemna* by the position of the lateral ocelli, in having the costa less produced beyond the tip of the radial sector, and in the arrangement of the setulæ of the wing in parallel rows.

Table of species.

a. Length 6 mm; thoracic stripes subobsolete. 1. *perspicua.*
aa. Length less than 5 mm.
b. Cubitus forks noticeably proximad of the proximal end of the crossvein; species over 3 mm. in length.
c. Fore metatarsus less than .8 of tibia in length; abdomen dark brown, hind margins of the segments broadly yellow; female. 2. *cincta* n. sp.
cc. Fore metatarsus over .8 of the tibia in length; abdomen yellow, each segment with a large sub-triangular spot; male. 3. *triangularis* n. sp.
bb. Cubitus forks at or distad of the proximal end of the crossvein.
c. Species over 3 mm. in length.
d. Cubitus forks at the proximal end of the crossvein; abdomen dark brown, each segment except the first with yellow margins. 4. *vulgaris.*
dd. Cubitus forks distad of the proximal end of the crossvein.
e. Thorax brown, humeri yellow; abdomen yellow, each segment with a large triangular brown spot; hind tarsi slightly shorter than its tibia. 5. *obesa.*
ee. Thorax yellowish, with 3 vittæ sometimes subcoalescent.
f. Abdomen largely brown, apical margin and large posterior lateral triangles, yellow; hind tarsi longer than tibia; Cu_2 somewhat sinuate. 6. *bellula* n. sp.
ff. Abdomen brown, segments yellowish at base. 7. *foeda.*
cc. Species less than 3 mm. in length.
d. Cubitus forks under the proximal end of the crossvein; hypopygium with slender clasper, each with about 10 strong setæ (Fig. 113). 8. *diffissa* n. sp.
dd. Cubitus forks only slightly proximad of fork of media; each clasper with a clavate basal lobe (Fig. 114); ventral aspect of hypopygium, apically, densely setose. 9. *patens* n. sp.

Trichonta Dawsoni is a fossil from British Columbia.

1. *Trichonta perspicua* Van der Wulp.

Tijdschr. v. Ent. XXIV. 142. 1881.

Male. Length 6 mm. Reddish yellow; antennæ 1.5 times as long as head and thorax, scape and basal joints yellow, remainder of flagellum fuscous. Thorax yellowish, with indica-

tions of 3 vittæ of which the median is geminate and most distinct. Abdomen slender, with a fuscous spot on each of the segments, that of the sixth nearly covering entire segment except the venter; hypopygium yellowish. Legs yellowish; coxæ each with black spot at apex; tibiæ a little darker, tarsi brown; fore metatarsus a fifth shorter than the tibia. Halteres yellow. Wings with yellowish gray tint; subcosta ends in R_1 beyond the middle of the basal cell; cubitus forks somewhat proximad of the fork of the media. "Quebec" (V.d.W.). "N. J."

2. *Trichonta cincta* n. sp.

Female. Length 3.25 mm. Head and antennæ fuscous, the face, palpi and scape yellow; antennæ about a third longer than head and thorax. Thorax yellow; dorsum with 3 wide brown stripes; scutellum, metanotum, and pleura largely brown; hairs pale. Abdomen black, shining, hind margin of each segment yellow. Legs and coxæ yellow, tarsi brown; a brown dash on under side of each femur; fore metatarsus over .75 as long as the tibia; hind tarsus slightly longer than its tibia. Wings hyaline, yellowish tinged, anterior veins brown; media forks slightly distad of the base of the radial sector; cubitus forks proximad of the proximal end of the crossvein, anal vein faint. Halteres yellow. Eastport, Me. (C.W.J.).

3. *Trichonta triangularis* n. sp.

Male. Length 4 mm. Head brownish yellow; face, palpi and basal joints of antennæ yellow, larger part of flagellum dark brown with whitish pubescence; antennæ about 2-3 longer than head and thorax. Thorax including pleura, scutellum, and metanotum yellow, mesonotum with 3 brown stripes; hairs yellow, setæ brown. Abdomen yellow, each segment with a large brown triangular spot, leaving the sides and narrow posterior margin yellow. Hypopygium brownish (Fig. 10, pl. 7 Genera Insectorum, Fasc. 93). Forceps (Fig. 111). Coxæ and legs yellow, tibiæ a little darker than femora, tarsi brownish, fore metatarsus about .95 as long as the tibia. Wings hyaline, yellow tinged. Venation as figured (Fig. 221). Halteres yellow. (Aug.) Ithaca, N. Y.

Var. a. Male. Differs only in having the fore metatarsus about 7-8 as long as the tibia. Ithaca, N. Y.

4. *Trichonta vulgaris* Loew.

Berlin. Ent. Zeitschr. XIII. 149. 1869.

Male and female. Length 3.2-3.5 mm. Head and antennæ fuscous, basal joints of the latter and palpi yellow. Dorsum of the thorax yellow with 3 fuscous stripes which are sometimes confluent; scutellum, metanotum and the pleura except between the fore coxæ and the humeri, fuscous. Abdomen fuscous, each segment except the first with a posterior fascia. Hypopygium black. Coxæ and legs yellow, tarsi darker; in the female the last 4 joints slightly tumid below. Wings cinereous, toward the costa yellowish; cubitus forks under the proximal end of the crossvein. "Md., D. C."

5. *Trichonta obesa* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 854. 1863.

Female. Length 4.5 mm. Fuscous; basal joints of the antennæ, palpi, humeri, legs and halteres yellow. Tarsi dark; femora with brown dash on the underside near the base; hind tarsi slightly shorter than the tibia. Abdomen yellow, with a triangular spot, covering the larger part of each segment. Wings grayish hyaline, the media forks under the base of the radial sector, the cubitus under the center of the crossvein. The male hypopygium is described and figured by Mik in Verh. Zool.-bot. Ges. Wien. XXX. 607. 1880. "Europe and Greenland."

6. *Trichonta bellula* n. sp.

Male. Length 3.5 mm. Head black, face, palpi and 4 basal joints of antennæ yellow, remainder of flagellum brown; antennæ about a third longer than the head and thorax. Dorsum of the thorax yellow with 3 brown stripes; pleura, scutellum and metanotum largely dark brown; hairs yellow, setæ brown. Abdomen dark brown, posterior margin of each segment produced anteriorly on the sides and anterior part of the venter, yellow; hypopygium dark (Fig. 112). Coxæ and legs yellow, tarsi darkened, each femur with a brown spot on the underside near the base; hind metatarsus slightly less than half as long as its tibia. Wings hyaline, grayish tinged, anterior veins brown; subcosta ends in R$_1$ beyond the middle of the basal cell; the media forks slightly distad of base of Rs; the cubitus forks

under the middle of the crossvein; Cu_2 somewhat sinuate; the anal vein and the petiole of the cubitus subequal in length. Halteres yellow. Mt. Ascutney, Vt., July (C.W.J.).

7. *Trichonta foeda* Loew.

Berlin. Ent. Zeitschr. XIII. 150. 1869.

Female. Length 3.7 mm. Head and antennæ fuscous black, face and 3 basal joints of antennæ, yellow; palpi mainly yellow. Dorsum of thorax yellow, with 3 blackish stripes; metanotum, scutellum and pleura more or less fuscous; hairs of thorax pale, setæ black. Abdomen fuscous, each segment more or less yellow at the base. Coxæ and legs yellow, tarsi darker. Wings cinereous, yellowish toward the costa, the stronger veins fuscous; cubitus forks under or but very slightly proximad of the fork of the media. Halteres yellow. "Middle States."

8. *Trichonta diffissa* n. sp.

Male. Length 2.2 mm. Head brownish yellow; face, palpi and base of antennæ yellow; antennæ 1.5 as long as head and thorax. Dorsum of thorax yellow with 3 brown stripes which coalesce posteriorly; scutellum, metanotum, and hinder part of pleura, brown; hairs yellow, setæ brownish. Abdomen brown; the venter and both front and hind margins of the segments and the hypopygium (Fig. 113) yellow; larger part of fifth and sixth segments dark brown. Coxæ and legs yellow, tibiæ slightly darker, apex of each hind femur, and the whole of the tarsi brown. Wings hyaline with a yellowish tinge; venation as figured. Halteres yellow. Ithaca, N. Y., and Brookline, Mass., August (C.W.J.).

9. *Trichonta patens* n. sp.

Male and female. Length 2.2-2.5 mm. In color similar to the foregoing. In the type specimen, the thorax is largely yellow, thoracic stripes pale brown, and the apex of the hind femur is not brown. In other specimens the darker color predominates. Differs from *T. diffissa* in wing venation, the cubitus forking distad of the proximal end of the crossvein (Fig. 223). The hypopygium differs in having a clavate lobe about 1-2 as long as the clasper articulated near the base of each clasper; and in having the apex of the ventral sclerite densely setose (Fig. 114). Ithaca, N. Y., May and August.

20. Genus *Cordyla* Meigen.

Illiger's Magazine II. 262. 1803; Klass. I. 93. 1804.

Polyxena. Nouv. Class. Mouches. 16. 1800. (Without type).

Front broad; eyes oval, ocelli small, 2 in number; contiguous to the eye margin; antennæ projecting forward, 2+9, 2+10, 2+12, 2+13, or 2+14 jointed, very short, but little longer than the height of the head, the joints shorter than broad, disk-like, closely sessile in dried specimens; palpi 4-jointed, basal joint small, second much enlarged, thickened (Fig. 54 Part I), third and fourth slender, almost filiform. Abdomen compressed, hypopygium of male small and inconspicuous. Legs slender, lateral setæ of hind tibiæ shorter than the diameter of the tibia at the widest part; posterior basal seta of hind coxa wanting. Costa of the wing does not extend beyond the tip of Rs; subcosta very short, curved toward R_1; media forks distad of the basal section of Rs; its posterior branch usually not reaching the wing margin (Figs. 224-228). The larvæ live in decaying wood and in fungi.

Table of species.

a. Males.
  b. Antennæ 2+13 jointed.
    c. Yellowish species, dorsum of thorax and end of abdomen darker; cubitus forks distad of the middle of petiole of media. 1. ***manca*** n. sp.
    cc. Fuscous species; cubitus forks proximad of middle of petiole of media. 2. ***scita*** n. sp.
  bb. Antennæ 2+12 or 2+10 jointed.
    c. Antennæ 2+12 jointed; abdomen wholly fuscous. 3. *volucris*.
    cc. Antennæ 2+10 jointed.
      d. Humeri yellow; hypopygium as figured (Fig. 118); eastern species. 4. ***recens*** n. sp.
      dd. Humeri dusky; hypopygium as figured (Fig. 119); western species. 5. ***neglecta*** n. sp.
aa. Females; antennæ 2+9 and 2+10 jointed.
  b. Antennæ 2+10 jointed; thorax and abdomen fuscous. 3. *volucris*.
  bb. Antennæ 2+9 jointed.
    c. Cubitus forks about opposite proximal end of the crossvein; thorax and abdomen shining dark reddish brown. 6. *C. sp.*
    cc. Cubitus forks at or distad of middle of petiole of the media.
      d. Wing over 5.5 times as long as the fore tibia. 7. *C. sp.*
      dd. Wing less than 5 times as long as the fore tibia.

e. Cubitus forks about opposite middle of petiole of media.
1. *manca* n. sp.

ee. Cubitus forks distad of middle of petiole of media.
4. *recens* n. sp.

1. *Cordyla manca* n. sp.

Male and female. Length 3 mm. Head and antennæ brown, base of the latter and last 2 joints of palpi yellow, large palpal joint dark brown; antennæ of male 2+13, of female 2+9 jointed. Thorax, abdomen and legs yellow, the mesonotum more dusky with indications of 3 stripes; posterior tergites dusky yellow to brown, posterior margins yellow; tibial spurs and tarsi brown; setæ black; hypopygium small (Fig. 115). Wings grayish hyaline, costal cell brown (Fig. 224). Halteres yellow. Ithaca, N. Y.

2. *Cordyla scita* n. sp.

Male. Length 2.5 mm. Fuscous; last 2 joints of palpi, coxæ, femora, tibiæ and halteres yellow; wings grayish hyaline, costa cell dusky yellow (Fig. 225); tibial spurs and tarsi brown. Antennæ 2+13 jointed; hypopygium small (Fig. 116). Friday Harbor, Washington (J.M.A.), July.

3. *Cordyla volucris* Johannsen.

Genera Insectorum; Fasc. 93. 101. 1909.

Male and female. Length 2.5 mm. Fuscous; base of each antenna, last 2 palpal joints, coxæ, femora, tibiæ and halteres yellow; wings grayish hyaline, costal cell more grayish (Fig. 226); tibial spurs and tarsi brown. Antennæ of male 2+12, of female 2+10 jointed; hypopygium small (Fig. 20, pl. 7 Genera Insectorum, Fasc. 93). (Fig. 117). Bred from larvæ found in fungi. Ithaca, N. Y., Sept.

4. *Cordyla recens* n. sp.

Male and female. Length 2.5 mm. Fuscous; base of antennæ, last 2 palpal joints, humeri, ventral segments 2, 3 and part of 4 of abdomen, coxæ, femora except tip of hind pair, tibiæ and halteres yellow; tibial spurs and tarsi brown; wings grayish hyaline, costal cell dusky yellow to grayish (Fig. 227). Antennæ of male 2+10, of female 2+9 jointed; hypopygium small (Fig. 118). Ithaca and Caroline, N. Y., June, July.

5. *Cordyla neglecta* n. sp.

Male. Length 2.5 mm. Coloring as in the foregoing (*C. recens*) but humeri only indistinctly yellow; venation and hypopygium as figured (Figs. 228, 119). Antennæ 2+10 jointed. Felton, Cal. (J.C.B.) May. A defective female specimen from Los Angeles, Cal., may belong here also.

6. *Cordyla* sp.

Female. Length 3 mm. Fuscous; the base of the antennæ, last 2 palpi joints, coxæ, femora, tibiæ and halteres yellow; tibial spurs and tarsi brown; venter and incisures dusky yellow; wings grayish hyaline, costal cell dusky yellow. Antennæ 2+9 jointed. Dubois, Wyo., 7000 ft. (W.M.W.), Sept.

7. *Cordyla* sp.

Female. Like *C. volucris* but antennæ 2+9 jointed. Orono, Me.; Washington, D. C. October and December. The Maine specimen was bred from a fungus (*Collybia* sp?).

21. Genus *Brachypeza* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 806. 1863.

Front broad, ocelli 3, laterals contiguous to eye margin, the middle one small; second palpal joint slightly swollen, the antennæ rather short, the flagellar joints closely sessile, annular. Abdomen constricted at the base, compressed; hypopygium of the male small. Legs stout, femora all broad, flattened; tibiæ strong, somewhat enlarged at the ends, with long spurs and moderately long lateral setæ; posterior basal seta of hind coxa present. Subcosta short, ending in R_1; costa not produced beyond Rs; the fork of the media under or proximad of the base of Rs; fork of cubitus far proximad of the proximal end of the crossvein; anal fold strong, anal vein short and delicate (Fig. 229).

Brachypeza bisignata Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 807. 1863.

Male. Length 5 mm. Robust. Antennæ shorter than the thorax, brown, 2 or 3 basal joints yellow; palpi, proboscis and face yellow, front and vertex dark brown, pruinose; with yel-

low hairs. Mesonotum with 3 wide blackish vittæ; the laterals abbreviated anteriorly, the middle one wedge shaped; hairs yellow; lateral and scutellar setæ strong, black; pleura yellow or brownish yellow, metanotum brown. Abdomen with blackish hair; first segment brown with yellow posterior margin, segments, 2, 3, 4 yellow, 5 and 6 brown; hypopygium brown, small. Coxæ, femora and tibiæ yellow, the apices of the hind femora, and of hind tibiæ and of all the tarsi brown; setæ of coxæ and tibiæ black. Each wing with a spot on the disk and another at the apex of Rs. Halteres yellow.

Female. Described by Lundström ('07 and '09). Abdomen wholly yellow except the first and sometimes a part of the sixth is brown.

Var. *divergens* n. var.

Male. Differs from Winnertz's description as follows: Front between middle ocellus and the base of the antennæ yellow; tips of trochanters, of middle femora and of middle tibiæ black; abdomen with a narrow black median dorsal stripe, 6 or 8 subconfluent black spots on sides of segments 2, 3, 4, and the greater part of sides of 5 and 6 except narrow posterior margin, black. Wing spots somewhat larger than in the European form. Hypopygium and wing as figured (Figs. 120, 229). The spurs are about 3-4 as long as the corresponding metatarsi; the hind femur is about 1-4 as wide as long; the hind tibia about 1-8 as wide as long. A single specimen was bred from a fungus (Collybia sp.?), Nov. 2, Orono, Me.; male and female specimens from St. Johnsbury, Vt., and Hanover, N. H., (C.W.J.), June, July.

22. *Rhymosia* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 810. 1863.

Head oval, front broad, ocelli 3, laterals large, closely contiguous to the eye margin, the middle one minute, placed in a groove on the front, sometimes almost concealed. Legs long and slender; lateral setæ of tibiæ delicate and little if any longer than the diameter of the tibiæ at the widest part. Posterior basal setæ of hind coxæ present. Costa meets the radial sector before the tip of the wing; subcosta very short, ending free or in R; fork of media proximad or under base of Rs; cubitus

usually forks under or proximad of the proximal end of the R-M crossvein, its elongate fork narrow at the base then suddenly divergent; anal vein very stout, rather long though not reaching wing margin; last anal long, incomplete, slender (Fig. 233). Larvæ live in fungi (*Armillaria,* etc.).

The elongate fork of the cubitus with its divergent branches, and the strong anal vein will distinguish this genus from its nearest relatives.

Table of species.

a. Cubitus forks nearly under the proximal end of the crossvein; fore metatarsus little if any longer than the tibia; anal vein ends distad of the fork of the cubitus; female. 1. Sp. a.

aa. Cubitus forks proximad of the proximal end of the crossvein.

b. Fore tibia and metatarsus subequal in length; anal vein slender, produced slightly beyond the fork of the cubitus; subcosta ends in R_1; female. 2. Sp. b.

bb. Fore tibia shorter than metatarsus, or otherwise distinct.

c. Third and fourth tarsal joints of the male with a series of curved spines below; fore metatarsus 1.6 times the tibia in length; anal vein produced beyond fork of the cubitus; hypopygium small (Fig. 121). 3. *serripes* n. sp.

cc. Tarsal joints without curved spines in the male.

d. Anal vein ends distad of the base of the fork of the cubitus.

e. Petiole of media shorter than the crossvein.

f. Head and thorax largely fuscous, hypopygium of male much longer than the last visible abdominal segment. 4. *inflata* n. sp.

ff. Head and thorax largely yellowish; hypopygium shorter than last abdominal segment. 5. *filipes*

ee. Petiole of media and crossvein subequal in length; hypopygium small (Fig. 123). 6. *imitator* n. sp.

dd. Anal vein ends at or proximad of the base of the fork of the cubitus.

e. Two basal setæ on each hind coxa. 7. *akeleyi* n. sp.

ee. One basal seta on hind coxa.

f. Fore tarsi about 3.5 times fore tibia in length in the male; 4 scutellar setæ. 8. *captiosa* n. sp.

ff. Fore tarsi about 3 times fore tibia in length in the male; 2 scutellar setæ. (Calif.) 9. *diffissa* n. sp.

Note. *Mycetophila plebeja* Walker and *M. sericea* Say. may belong here.

1. *Rhymosia* sp. a.

Female. Length 3 mm. Head and thorax fuscous, the scape, palpi, humeral spot and thoracic hairs yellow. Abdomen fus-

cous, the venter largely yellowish. Coxæ and legs yellow, tarsi and tibial spurs brown. Two scutellar setæ, one basal hind coxal seta. Wings yellowish hyaline, subcosta short, ending free (Fig. 230). Halteres yellow. Los Angeles Co., Cal., Feb. (W.M.W.)

2. *Rhymosia* sp. b.

Female. Length 4.5 mm. Head fuscous, the scape, basal joints of flagellum, and palpi yellow. Thorax yellow, the dorsum of the mesonotum, the lower margin of the pleura, the scutellum except the margin, and the metanotum, fuscous; hairs yellow, of the dorsum dense, depressed, brownish; 4 scutellar setæ. Tergites of abdomen fuscous, sternites yellow. Coxæ and legs yellow, tarsi and tibial spurs brown; one basal hind coxal seta. Wing yellowish hyaline, subcosta ends in R_1 (Fig. 231). Halteres yellow. Selkirk Mts., B. C. (J.C.B.).

3. *Rhymosia serripes* n. sp.

Male. Length 3 mm. Head fuscous, the scape and palpi yellow; antennæ half longer than the thorax. Thorax yellow, the 3 stripes of the mesonotum, the scutellum and metanotum fuscous; hairs yellow, those of the mesonotum darker, setæ black; 2 scutellar setæ. Dorsum of abdomen brownish, venter yellow; hypopygium yellow, small (Fig. 121). Coxæ and legs yellow, tarsi and tibial spurs brown; one posterior basal hind coxal seta; third and fourth fore tarsal joints each with 7 or 8 short, stout, curved, claw-like spines, those of the third joint situated distad of the middle and more blunt. Wing yellowish hyaline, subcosta short, ends free (Fig. 232). Halteres yellow. Ithaca, N. Y. Aug.

4. *Rhymosia inflata* n. sp.

Male. Length 5 mm. Head fuscous; antennæ less than twice as long as the thorax, fuscous, the immediate base of the flagellum, the scape, and the palpi yellowish. Setæ of thorax and the 2 of the scutellum black; the hairs appressed, silvery. Mesonotum with 3 sometimes wholly confluent fuscous stripes, the disk of the scutellum, metanotum and the pleura in large part fuscous. Abdomen yellow, the first segment, the last segment in large part, the dorsum of each intermediate segment,

the tip of the large hypopygium (Fig. 122), and sometimes an interrupted longitudinal ventral line, fuscous. Coxæ and legs yellow, tarsi and tibial spurs brown; usually 2 posterior basal hind coxal setæ. Wing yellowish hyaline, subcosta ends free (Fig. 233). Halteres yellow.

Female. Like the male, but the exposed part of the ovipositor when retracted is slightly shorter than the last abdominal segment and there is usually but one basal hind coxal seta.

Ithaca, N. Y. Oct.-Nov. Bred from *Armillaria mellea.*

5. *Rhymosia filipes* Loew.

Berl. Ent. Zeitschr. XIII. 149. 1869.

Length 5.5 mm., wing 4.3 mm. Opaque ochraceous testaceous. Head similarly colored, antennæ long, slender, fuscous, the scape, the immediate base of the flagellum, and the palpi yellowish. Setæ of thorax and scutellum black. The first and last abdominal segments and a dilated posterior fascia on each of the intermediate tergites, fuscous. Hypopygium yellow, a little shorter than the last abdominal segment, black pilose. Coxæ dusky yellow, with short black setæ. Legs slender, long, dusky yellow, tibiæ more subfuscous, tibial spurs and tarsi blackish. Wing cinereous yellow, more dusky yellow toward the costal margin. "Connecticut."

In the type specimen the petiole of the media is about half as long as the R-M crossvein, and the fork of the cubitus is far proximad of the proximal end of the crossvein.

6. *Rhymosia imitator* n. sp.

Male and female. Length 4.5 mm. Resembles *R. inflata* (4) in coloring, but the brown of the abdomen is more extended, each intermediate sclerite having the yellow confined to the anterior 1-2 of the sides. The 2 scutellar setæ and one posterior basal hind coxal seta, black. Wings yellowish hyaline, subcosta ends free (Fig. 234). Halteres yellow. Hypopygium (Fig. 123) small. Black Rock Creek, Wyo., Sept.; Austin, Texas (W.M.W.) June; San Pablo, Cal. (J.C.B.) Nov.

7. *Rhymosia akeleyi* n. sp.

Akeleyi Wheeler, MS.

Male. Length 4.5 mm. Resembles *R. inflata* (4) in coloring, but the face, the pleura except the lower margin in part

and the wide margin of the scutellum yellow. Abdomen yellow, the dorsum of each sclerite except narrow hind margin, the entire last segment, and the tip of the large hypopygium (Fig. 124) black. Two scutellar and 2 posterior basal hind coxal setæ. Legs colored as in *inflata*. Wing yellowish gray hyaline, subcosta ends in R_1 (Fig. 235). Halteres yellow. Wis. (W.M.W.) and Cornish, N. H. (C.W.J.) July.

8. *Rhymosia captiosa* n. sp.

Male. Length 5.5 mm. Head fuscous, face, palpi, scape and base of flagellum yellow; antennæ about a third longer than the thorax. Thorax yellow, the dorsum of mesothorax, the disk of the scutellum, the center of the metathorax, and the lower margin of the pleura, fuscous. The hairs of the head and thorax appressed, pale, the setæ black; 4 prominent scutellar setæ. Abdomen yellow, the dorsum of each of the first four segments brown except toward the posterior margin, the whole of the fifth and sixth brown; hypopygium large, about as long as the last two abdominal segments taken together; yellow, tipped with black (Fig. 125). Coxæ and legs yellowish, tarsi and tibial spurs brown. Wings yellowish gray hyaline, subcosta ends in R_1 (Fig. 236). Brattleboro, Vt., and N. H. (C.W.J.).

Female. Like the male in coloring except that the fifth and sixth abdominal segments are marked like those preceding. Hanover, N. H.; Brattleboro, Vt.; and North Adams, Mass. (C.W.J.). June and July.

9. *Rhymosia diffissa* n. sp.

Male. Length 4.5 mm. Head fuscous, face dusky yellow, palpi and scape yellow; antennæ over twice as long as the thorax. Thorax fuscous, the humeri and a narrow line to the base of the wing yellow, hairs appressed, pale, setæ black, 2 scutellar setæ. First and last segment of the abdomen largely black, the intermediate segments yellow, each with a very large triangular saddle which nearly reaches the posterior margin, broadest anteriorly where it nearly reaches the sternite; hairs dusky; hypopygium large, yellow, tipped with black (Fig. 126). Coxæ and legs yellowish, tarsi and tibial spurs brown. Wings yellowish gray hyaline, subcosta ends in R_1 (Fig. 237). Hal-

teres yellow. Stanford Univ., Cal., Feb.; Mt. Constitution, Orcas, Id. (J.M.A.) July.

23. *Allodia* Winnertz.

Verh. Zool.-bot. Ges. Wien. XIII. 826. 1863.

Brachycampta, Winnertz, ibidem. 833. 1863.

Lateral ocelli contiguous to the eye margin, the middle one very minute, in a groove, or wanting. Scutellum large, with 2 to 8 marginal setæ. Legs slender, hind coxæ with 1 to 3 posterior basal setæ. Costa ends at the tip of Rs; subcosta short, ending free or in R_1; petiole of media short; cubitus forks proximad of the fork of the media, and often even proximad of the base of the petiole of the media; first anal delicate, short, incomplete (*Allodia* Winnertz) or entirely wanting (*Brachycampta* Winnertz), second anal delicate and incomplete.

As both the structure of the anal vein and the position of the fork of the cubitus are slightly variable even within a species these characters cannot be used to distinguish the two Winnertzian genera.

Table of species.

a. Hind coxæ each with a vertical black dash near the apex on outer side; under side of hind femora each with a brown mark; 6 scutellar setæ. 1. *crassicornis* and varieties.

aa. Not so marked.

b. Fore metatarsus equal or longer than the tibia and at least 1-4 of its length longer than the coxa.

c. Four scutellar bristles, 2 hind coxal setæ, fore metatarsus nearly twice as long as the fore coxa. 2. *bulbosa* n. sp.

cc. With 2 scutellar bristles, or otherwise different.

d. Cubitus forks proximad of the proximal end of the crossvein.

e. Pleura fuscous; anal vein moderately strong (Fig. 237); length 4.5 mm; western species; page 313. *Rhymosia diffissa* n. sp.

ee. With other characters.

f. Claspers as figured (Fig. 130); eastern species. 3. *actuaria* n. sp.

ff. Claspers otherwise; Wyoming species. 4. *Allodia* sp.

dd. Cubitus forks under or distad of the proximal end of the crossvein; end of clasper broadly truncate. 5. *falcata* n. sp.

bb. Fore metatarsus shorter than the tibia and not 1-10 longer than fore coxa.
c. Scutellum with 4 marginal setæ.
d. Cubitus forks proximad of the proximal end of the R-M crossvein.
e. Superior and inferior forceps lanceolate. (Fig. 132); a row of 4 to 6 setæ over the fore coxa; Mass. 6. *elata* n. sp.
ee. One pair of forceps curved; (Fig. 133); lower margin of trochanter with 2 setæ; B. C. 7. *bella* n. sp.
dd. Cubitus forks distad of proximal end of crossvein; female. 8. *Allodia* sp.
cc. Scutellum with 2 marginal setæ.
d. Cubitus forks at least slightly proximad of proximal end of crossvein; or if directly under, then thorax largely yellow.
e. Yellowish species.
f. One pair of forceps clavate, much longer than the other pair (Fig. 134); N. Y. 9. *beata* n. sp.
ff. Both pairs of forceps more or less elongate (Fig. 135); Western species. 10. *callida* n. sp.
ee. Dusky species; fore metatarsus less than .8 as long as the tibia; female. Western species. 11. *Allodia* sp.
dd. Cubitus forks under or distad of base of the crossvein; thorax mainly brown or fuscous. 12. *delita* n. sp.

Allodia (Brachycampta) *unicolor* Lundb. from Greenland is omitted from the above table. Its thorax and abdomen are uniformly brown; fork of the cubitus is retracted and the fore metatarsus is shorter than the tibia.

The species *despecta, nubila, obscura, plebeja,* and *sericea* described under *Mycetophila* may possibly belong to this genus.

1. *Allodia crassicornis* Stannius.

Observ. de Mycetophila. 22. 1831.

Male. Length 4 to 5 mm. Face and mouth parts yellowish; head brownish; antennæ as long as head and thorax united, brown, basal joints yellow. Thorax brown to yellowish, mesonotum with 3 broad blackish stripes which may be wholly confluent; hairs yellowish gray, appressed, setæ at the sides and the 6 upon the scutellum, black; pleura brown to yellowish. The first abdominal segment fuscous with yellow hind margin, the second, third and fourth yellow, each with a large quadrangular fuscous spot, or sometimes only with rather smaller triangular spot, fifth and sixth fuscous usually with yellow posterior margins; hypopygium yellow. Coxæ yellow, hairs

yellow, setæ at tip of fore pair black; posterior pair with vertical black dash at tip on outer side, and with 2 posterior basal setæ, trochanters each with black spot below; femora yellow with brown spot on the under side of each, and brown spot at apex; tibiæ pale brown, spurs and tarsi brown, fore tibia about 1-16 shorter than the metatarsus. Wing yellowish tinged, media forks at or slightly distad of the base of Rs, cubitus forks distad of the proximal end of the crossvein; anal furrow delicate ending before the base of the fork of the cubitus; anal vein stronger and longer; halteres yellow.

Female. Antennæ shorter than head and thorax united, conical, 5 basal joints of flagellum swollen, twice as wide as long, fuscous, with yellowish basal joints. Abdomen fuscous, segments with yellow posterior margins and venter. "Europe, N. A., Pa., N. J."

Var. a. Male and female. With vertical black dash upon middle coxa also but no brown spot under fore femora; hypopygium as figured (Fig. 127), cubitus forks at or very slightly proximad of the proximal end of the crossvein; otherwise like the foregoing. Burlington, Vt. (C.W.J.); Ithaca, N. Y. May-July.

Var. b. Female. Like var. a but with cylindrical antennæ. Burlington, Vt. (C.W.J.). June, July.

Var. c. Male. Like var. a but with less yellow upon thorax and abdomen, and with fore metatarsus 1-16 shorter than the tibia. Ithaca, N. Y.

Var. d. Female. Like var. c with conical antennæ but with fore metatarsus about .2 shorter than the tibia. Torrey's Lake, Wyoming, (W.M.W.). September.

2. *Allodia bulbosa* n. sp.

Male. Length 4.5 mm. Yellow; apical half of antennæ, the 3 thoracic stripes, center of scutellum, the lower margin of the metapleura, the metanotum light brown, the anterior 2-3 of each tergite of abdomen, a spot at tip of each hind femur, the tibial spurs and tarsi darker brown; hairs pale, setæ black; hypopygium small, yellow (Fig. 129). Hind coxæ each with 2 posterior basal setæ; fore metatarsus 1.38 times the tibia in length. Wings tinged with yellow, subcosta curved down but not ending in R_1 (Fig. 239); anal furrow strong, anal vein

weak. N. H.; Ithaca, N. Y. (June); Forest Hill, N. J., (Weidt).

3. *Allodia actuaria* n. sp.

Male. Length 2.5 mm. Head fuscous, palpi and scape yellow. Thorax yellow, the center of the mesonotum, the scutellum, metanotum and margin of the metapleura dark brown, hairs pale, setæ black; 2 scutellar setæ. Abdomen yellow, posterior 2-3 of the first 4 dorsally, and the whole of the fifth segment dark brown; hypopygium yellow (Fig. 130). Coxæ and legs yellow, tibial spurs and tarsi brown; fore metatarsus about 1-8 longer than the tibia. Wings hyaline, yellow tinged, fork of cubitus retracted, anal vein indistinct (Fig. 240). Halteres yellow. Ithaca, N. Y. (Aug.)

Female. A single female specimen from Woods Hole, Mass., (C.W.J.) has wholly yellow pleura, and the mesonotum with 2 indistinct brown stripes which meet in front of the dark scutellum.

4. *Allodia* sp.

Male. Length 3 mm. Similar to the foregoing in coloring but the brown on the mesonotum is more extended, and the hypopygium differs. Fore metatarsus about .2 longer than the tibia. Wings hyaline, yellow tinged, fork of cubitus retracted far proximad of the base of the petiole of the media. A single specimen from Buck Creek, Wyo. (W.M.W.) Aug.

5. *Allodia falcata* n. sp.

Male. Length 3.5 mm. Fuscous; the palpi, scape, the apical 1-3 or 1-4 of the intermediate ventral sclerites of the abdomen, the hypopygium, coxæ, tibiæ and halteres yellow, tibial spurs and tarsi brownish; wings yellowish hyaline. Antennæ about 1.5 times as long as the head and thorax united. Hairs of body pale, setæ black; 2 setæ on scutellum; hypopygium longer than the sixth abdominal segment (Fig. 131); fore metatarsus and tibia subequal. Subcosta bent towards but not reaching R_1; cubitus forks about opposite or slightly distad of the proximal end of the crossvein.

Female. Yellow of abdomen more extended, and humeri sometimes also yellow. Cape May, N. J. and Ithaca, N. Y. (Sept.).

Var. a. Male and female. Length 3 mm. Humeri, pleura largely, venter and sides of the second to fifth abdominal segments, and sometimes hind margins of dorsal sclerites also, yellow. Prince Co. Wis., Chicago, Ill., (W.M.W.), Longmire's Springs, Wash. (J.M.A.) May to Aug.

6. *Allodia elata* n. sp.

Male. Length 2.5 mm. Head dusky yellow; basal joints of antennæ, palpi, and face yellow, apical half of antennæ subfuscous, hairs pale. Thorax yellow, scutellum, metanotum and 2 narrow converging stripes on mesonotum, brown; hairs pale, setæ black; 4 marginal setæ on scutellum. Abdomen yellow, a longitudinal dorsal stripe and the greater part of the fifth and sixth segments, dark brown; hypopygium (Fig. 132) yellow. A row of 4 to 6 fine blackish setæ just over the base of the fore coxæ. Coxæ and legs yellow, tibial spurs and tarsi brown; fore metatarsus about 7-8 of tibia in length; one posterior basal hind coxal seta. Wings yellowish hyaline; subcosta curved toward but not reaching R_1, cubitus forks proximad of the proximal end of the crossvein. Halteres yellow. Fall River, Mass., (N. S. Easton) May.

Female. One specimen from Hampton, N. H. (S. A. Shaw) differs in being paler, abdominal markings pale brown, setæ over fore coxæ paler.

Var. a. Female. Mesonotum subfuscous, tergites fuscous except hind margins. Blue Hills, Mass. (C.W.J.) July. One specimen.

Var. b. Female. Head, flagellum, thorax and abdomen fuscous, venter and narrow hind margins of tergites yellow. St. Johnsbury, Vt. (C.W.J.) June. One specimen. Var. a and b may possibly be distinct species.

7. *Allodia bella* n. sp.

Male. Length 2.5 mm. Head and antennæ brown; face, palpi, scape and base of flagellum yellow; antennæ about 1-4 longer than the head and thorax united. Thorax reddish yellow, mesonotum with 3 brown stripes more or less confluent; scutellum reddish, with 4 setæ, metanotum and margin of metapleura, brown; 2 setæ over the base of the fore coxæ. Abdomen dark brown, the venter of the first 4 segments yellow;

hypopygium (Fig. 133), yellow. Coxæ and legs yellow, tibial spurs and tarsi brown; fore metatarsus slightly shorter than the tibia. Wings yellowish hyaline; subcosta bends toward but apparently does not reach R_1; cubitus forks slightly proximad of the proximal end of the crossvein. Halteres yellow. Downie Creek, Selkirk Mts., B. C. (J.C.B.) August.

A defective specimen from Stanford Univ., Calif. (J.M.A.) taken in February may belong here.

8. *Allodia* sp.

Female. Length 3 mm. Brown; the scape, palpi, coxæ, femora, tibiæ, venter of intermediate segments in large part, ovipositor, and halteres yellow. Antennæ shorter than the thorax; fore metatarsus shorter than the tibia; cubitus forks distad of the proximal end of the crossvein. Dubois, Wyo. (W.M.W.) Sept.

9. *Allodia beata* n. sp.

Male and female. Length 3 mm. Head brown, basal joints of antennæ, and palpi yellow; antennæ about 1.5 times as long as the head. Thorax dusky yellow, 3 more or less confluent stripes of the mesonotum, scutellum and metanotum dark brown; scutellum with 2 marginal setæ. The tergites of the abdomen brown, the venter yellow; hypopygium (Fig. 134) yellow. (See also Pl. 7, fig. 14, Genera Insectorum, Fasc. 93). Coxæ and legs yellow, the tibial spurs, the tarsi and the extreme tips of the hind femora brown, fore metatarsus shorter than tibia. Wings yellowish hyaline; cubitus forks proximad of the proximal end of the crossvein. Halteres yellow. Ellis, and Ithaca, N. Y.

In some specimens the thoracic marks are obsolete and the abdomen is also much paler. In one the fifth and sixth segments are dark brown.

10. *Allodia callida* n. sp.

Male. Length 3 mm. Similar to the preceding but fifth and sixth abdominal segments are dark brown. Leg proportions also similar. Cubitus forks under the proximal end of the crossvein. Hypopygium with both pairs of forceps more or less lanceolate (Fig. 135). Keyport, Wash. (J.M.A.) Aug.; Littlewind River, Wyo. Sept.

11. *Allodia* sp.

Female. Length 3.5 mm. Fuscous; scape, palpi, spot below humerus, hind margins of the posterior tergites and the venter especially toward the tip, coxæ, tibia, and halteres yellow. Antennæ slightly enlarged at the base, about as long as head and thorax. Fore metatarsus about .8 as long as the tibia. Cubitus forks proximad of base of crossvein. Mt. Constitution, Orcas, Id., Wash. (J.M.A.) July.

12. *Allodia delita* n. sp.

Male. Length 3.5 mm. Fuscous, scape, palpi, humeri, anterior part of the venter, coxæ, femora, tibiæ, and halteres yellow. Antennæ more than half again as long as the head and thorax united. Scutellum with 2 marginal setæ; setæ over fore coxæ blackish. Fore metatarsus slightly shorter than the tibia. Wing yellowish hyaline; subcosta curved toward but does not reach R_1; cubitus forks about opposite the fork of the media. Hypopygium large (Fig. 136). Mt. Constitution, Orcas, Id.; Wash. (J.M.A.) July.

Female. A specimen from Berkeley, Calif. (W.M.W.) has dark humeri, pale brown hairs over fore coxæ, and shorter antennæ.

Var. a. Male. Length 3 mm. Like the foregoing in coloring and structure but the setæ above the fore coxæ are pale brown and the hypopygium differs slightly. Wis. (W.M.W.). This may possibly be a distinct species.

Addenda.

Dr. H. Dziedzicki of Warsaw, Russia, recently informed me that the hypopygium of *Platyura diluta* Lw. is identical with that of *P. unicolor* Winn., and that of *P. subterminalis* is like that of *P. infuscata* Winn. As the last two also resemble each other in other particulars they may be identical. *Platyura parva* belongs to Enderlein's new genus *Paraplatyura,* R_{2+3} ending in R_1.

Prof. T. D. A. Cockerell called my attention to an error in Part II (p. 131). *Tetragoneura peritula* should have been recorded from near Rifle, Colorado, an Eocene locality.

On page 136 in the description the hypopygium of *S. galbana* for *inferior* read *superior,* for *dorsal* read *ventral,* and vice versa. Similar corrections must be made under explanation of figure 122, page 192. For *glabana* read *galbana.* (Part II).

In the tables of leg measures on pages 323-325 the letters ct or t following a name signify that the measurements were made upon the cotype or the type specimen.

Since the publication of my previous papers on the *Mycetophilidae* in Bulletins 172 and 180 of this Station and in Genera Insectorum, Fasc. 93 there have appeared two papers by Dr. Enderlein (Trans. Linn. Soc. London, 1910, and Stettin Ent. Zeit. 1911) on this family of flies in which some additional genera have been proposed. As some of these genera occur in America it is desirable to give a brief synopsis of each with such differential characters as may be necessary to distinguish them from the older genera as characterized in the synoptic tables published in the previous papers of this series and in Genera Insectorum.

Mycetobiinae.

Mesochria is related to *Mycetobia* but differs in having contiguous eyes, and a coalescence of the tips R_1 and R_{2+3}. *Scotella* I consider a *Sciophiline.* See below.

Ceroplatinae.

Placoceratias differs from *Ceratelion* in possessing but 2 ocelli. In *Paraplatyura* R_{2+3} ends in R_1 in this respect differing from *Platyura. P. parva* from the St. Vincent Isl. should be placed here.

Sciophilinae.

Ectrepesthoneura was erected to contain *Tetragoneura hirta.* In this genus the subcosta ends in R_1 and the petiole of the cubitus is very short, thus distinguishing it from *Tetragoneura. Scotella* was referred to the *Mycetobiinae* by Dr. Enderlein but I am inclined to interpret the homology of the wing veins differently. In the figure given by him (Tran. Linn. Soc. p. 61) the veins marked cu and ax I consider to be M and cu respectively. This genus may be separated from *Paratinia* by the elongate petiole of the radial sector, and the presence of scales on thorax and abdomen. *Pleonazoneura* and *Neurocompsa* are both related to *Neoempheria* from which they differ in having a distinct vein between R and M instead of merely a fold. The second genus is distinguished further in having an accessory crossvein.

Mycetophilinae.

Aphanizophleps is an aberrant form with defective venation probably related to the *Sciarinae,* resembling *Manota* from which it is distinguished by the position of the lateral ocelli close to the eye margin. *Leiella* closely resembles *Rondaniella,* but it has only 2 ocelli, and the basal section of Rs is lacking. *Megalopelma,* a genus split off from *Phthinia,* differs in having the subcostal crossvein placed distad of the base of Rs. The American species *P. fraudulenta* no doubt belongs here. *Platurocypta* has but 2 ocelli, and a depressed instead of a compressed abdomen, differing in these respects from *Epicypta. Plastacephala* may be distinguished from *Mycetophila* by the form of the abdomen which is depressed instead of compressed. *Platyprosthiogyne* resembles *Zygomyia* but it has its costa produced, the ocelli but 2 in number, and a depressed abdomen.

LEG MEASUREMENTS.

These tables give the relative measurements of the joints of the legs, the fore tibia (T) being taken as 100.

Name.	Fore Leg.							Middle Leg.							Hind Leg.						
	F	T	1	2	3	4	5	F	T	1	2	3	4	5	F	T	1	2	3	4	5
Gnoriste megarrhina, male	80	100	89	51	29	18	11	90	132	102	52	31	18	13	105	162	102	42	28	15	10
Gnoriste megarrhina, female	83	100	88	49	29	17	–	90	132	97	44	34	–	–	118	180	110	43	29	19	12
Gnoriste macra, male, t.	–	100	84	44	35	21	16	98	150	84	49	32	21	16	128	–	–	–	–	–	–
Acnemia flaveola, female	–	100	85	44	35	25	21	118	118	76	38	27	21	15	148	170	82	36	27	18	12
Acnemia psylla, male	106	100	90	52	35	23	19	132	142	100	42	26	19	13	158	171	103	37	24	18	14
Rondaniella abbreviata, male	118	100	71	44	32	22	19	148	159	100	48	40	26	20	–	–	–	–	–	–	–
Neuratelia silvatica, male, t.	81	100	144	71	53	28	19	–	–	–	–	–	–	–	125	180	116	53	33	19	15
Neuratelia scitula, male, t.	78	100	143	71	50	–	–	–	–	–	–	–	–	–	112	156	104	50	33	19	15
Neuratelia eminens, female, t.	95	100	95	55	42	27	18	90	118	87	53	32	21	16	136	175	106	49	36	22	16
Neuratelia desidiosa, female, t.	93	100	104	–	–	–	–	93	132	108	54	40	24	18	131	181	113	55	33	21	18
Neuratelia nemoralis, male	85	100	102	67	45	25	16	97	127	104	60	36	20	16	120	181	116	57	33	25	18
Leptomorphus ypsilon, female, t.	73	100	163	75	61	42	25	85	146	131	62	49	29	22	124	193	122	58	42	25	20
Phthinia tanypus, female	73	100	238	88	46	23	15	85	143	203	88	38	–	–	126	162	124	62	31	9	6
Phthinia tanypus, male	70	100	235	95	52	30	17	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Phthinia curta, male t.	82	100	82	80	53	40	27	82	126	100	63	37	23	17	133	163	120	60	30	20	13
Coelosia modesta, male, t.	96	100	78	49	31	19	13	–	–	–	–	–	–	–	144	200	100	38	27	18	13
Coelosia lepida, male, t.	78	100	75	48	33	22	13	118	140	87	43	28	20	15	120	196	93	37	26	20	15
Coelosia gracilis, male, t.	95	100	74	52	43	26	17	131	156	100	48	33	22	15	156	210	108	43	26	22	15
Syntemna separata, male, t.	102	100	85	64	51	–	–	142	140	111	51	38	30	21	–	200	115	43	34	25	21
Syntemna rejecta, male, t.	100	100	72	46	35	27	21	137	150	96	46	33	25	21	167	208	117	46	33	25	21
Syntemna longicornis, male	97	100	63	44	37	30	20	115	130	85	45	33	26	22	157	189	100	46	30	22	18
Syntemna vittata, var. fasciata, male, t.	113	100	67	52	47	31	22	131	131	100	47	36	25	19	172	185	103	39	28	22	19
Syntemna vittata? female	118	100	78	54	45	32	23	132	132	97	43	36	–	–	157	200	107	47	36	25	20
Megophthalmidia occidentalis, male, t.	103	100	56	33	30	23	20	135	131	83	45	36	28	19	167	183	90	45	31	26	21
Anatella sylvestris, male, t.	93	100	98	81	54	39	32	110	132	107	58	39	32	27	136	171	117	49	29	24	22
Docosia nigella, male, t.	123	100	63	27	18	11	41	159	141	79	36	25	18	36	177	208	105	50	–	–	–
Docosia nitida, male, t.	119	100	71	33	28	22	22	150	131	90	47	36	26	22	174	187	122	53	39	30	22
Docosia dichroa, male	119	100	57	19	16	12	19	148	126	78	31	24	19	24	166	176	100	43	36	24	19
Trichonta triangularis, male, var. a. t.	114	100	95	57	47	29	22	136	146	107	57	43	–	–	161	205	116	50	36	–	–
Trichonta triangularis, male, t.	106	100	88	53	39	27	25	131	140	97	49	38	28	25	156	200	107	44	33	25	22

LEG MEASUREMENTS.

These tables give the relative measurements of the joints of the legs, the fore tibia (T) being taken as 100—Continued.

Name.	Fore Leg.							Middle Leg.							Hind Leg.						
	F	T	1	2	3	4	5	F	T	1	2	3	4	5	F	T	1	2	3	4	5
Trichonta diffissa, male, c. t.	125	100	78	44	30	22	18	136	130	86	40	30	22	19	160	195	100	37	27	21	19
Trichonta patens, female, t.	122	100	78	45	36	22	19	122	140	88	45	36	22	19	156	200	98	40	33	25	19
Trichonta bellula, male, t.	112	100	79	54	37	21	–	138	142	92	46	31	25	21	146	196	92	42	29	23	19
Trichonta cincta, female, t.	111	100	77	–	–	–	–	140	140	93	47	34	25	21	148	205	115	42	34	25	21
Boletina sedula, male, t.	90	100	85	52	28	18	16	107	153	97	43	27	18	15	–	–	–	–	–	–	–
Boletina sedula, female, c. t.	94	100	78	47	29	19	17	122	148	87	39	27	18	16	138	188	94	31	23	16	13
Boletina inops, female	93	100	72	40	25	19	15	106	134	82	35	25	16	14	130	183	98	31	25	16	14
Boletina nacta, male, t.	90	100	90	61	47	27	20	114	145	100	58	40	23	20	131	189	122	52	37	23	16
Boletina obscura, male, t.	100	100	70	36	28	16	20	120	128	76	40	30	16	20	152	180	97	46	32	16	20
Boletina imitator, male, t.	80	100	91	52	35	22	15	98	131	95	39	30	17	14	124	170	106	35	28	17	–
Boletina longicornis, male, t.	85	100	80	49	32	19	13	100	135	90	40	27	20	12	–	–	–	–	–	–	–
Boletina tricincta, male	108	100	–	–	–	–	–	–	–	–	–	–	–	–	168	200	108	43	35	27	22
Boletina tricincta, female	95	100	70	40	30	18	14	114	117	70	37	30	17	15	139	161	74	35	28	22	15
Boletina notescens, male, t.	91	100	88	51	33	21	15	112	127	98	40	30	21	15	136	172	100	36	17	21	15
Boletina notescens, var. a., female	92	100	81	47	33	21	16	119	139	95	45	33	19	17	142	189	111	–	–	–	–
Boletina hopkinsii? female	98	100	67	35	27	17	19	118	130	82	40	31	20	18	149	183	98	43	31	–	–
Boletina gracilis, male, t.	87	100	80	54	38	24	17	–	–	–	–	–	–	–	132	163	104	44	31	19	17
Boletina delicata, male, t.	92	100	84	52	34	–	–	116	132	90	46	32	16	14	144	190	96	44	32	20	14
Boletina cincta, male, t.	93	100	62	45	38	24	21	117	114	80	41	28	21	17	138	173	–	–	–	–	–
Boletina melancholica, male, t.	–	100	76	42	18	15	14	–	121	83	41	28	15	15	124	182	97	38	28	19	17
Boletina sobria, female	100	100	64	41	32	23	18	132	132	82	40	34	23	18	154	191	102	41	34	23	23
Boletina obesula, female, t.	97	100	70	34	25	17	15	116	133	78	39	28	19	17	144	187	106	44	31	22	17
Leia nigra, male, t.	112	100	80	40	27	20	20	162	154	106	58	41	29	23	182	212	110	56	41	30	23
Leia dryas, male, t.	112	100	104	57	43	27	23	165	160	106	59	37	27	20	169	220	100	47	30	27	20
Leia plebeja, male, t.	106	100	87	47	40	27	23	165	165	114	57	43	27	20	200	240	110	60	40	30	23
Leia opima	110	100	110	66	47	28	23	156	172	112	53	37	24	22	184	236	110	50	35	24	20
Leia striata, var. a., male	114	100	123	78	57	39	25	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Leia winthemii, male	103	100	110	60	43	26	19	144	165	103	48	38	24	19	162	220	107	46	31	24	19
Leia cincta, male	120	100	–	–	–	–	–	165	165	105	55	40	27	17	–	–	–	–	–	–	–
Leia decora, male	118	100	84	49	47	30	24	172	160	–	–	–	–	–	182	226	111	–	–	–	–

LEG MEASUREMENTS.

These tables give the relative measurements of the joints of the legs, the fore tibia (T) being taken as 100—Concluded.

Name.	Fore Leg.							Middle Leg.							Hind Leg.						
	F	T	1	2	3	4	5	F	T	1	2	3	4	5	F	T	1	2	3	4	5
Leia sublunata, male	112	100	96	53	44	26	20	158	160	112	53	35	22	16	170	250	104	48	33	22	18
Leia varia, female	98	100	–	–	–	–	–	140	162	115	57	38	27	23	166	217	–	–	–	–	–
Leia ventralis, female	102	100	84	40	32	22	22	148	152	94	42	32	24	24	184	220	96	40	32	22	22
Leia cuneola, female	120	100	104	50	35	26	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Leia bivittata, female	104	100	83	43	35	23	17	143	143	97	47	37	23	18	162	204	95	45	38	27	18
Leia oblectabilis, male	118	100	114	63	54	38	25	159	173	114	50	36	27	23	191	246	107	41	34	27	23
Brachypeza bisignata var. divergens, male, t	114	100	84	68	47	36	32	159	146	136	77	57	41	34	191	191	136	59	45	36	32
Cordyla manca, female, c. t	144	100	72	60	56	40	40	208	189	144	92	64	–	–	232	248	168	68	56	48	40
Cordyla recens, male	137	100	100	73	64	–	–	168	182	164	82	73	50	36	227	236	164	68	59	36	27
Cordyla scita, male, t	–	100	83	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cordyla neglecta, male, t	154	100	91	68	63	41	36	182	191	154	82	68	41	32	218	236	154	63	59	36	27
Cordyla volucris, male, c. t	142	100	92	67	62	46	37	150	175	158	–	–	–	–	208	200	168	75	62	46	37
Cordyla volucris, female	130	100	71	58	46	37	33	166	150	124	75	58	46	37	208	192	142	66	58	42	33
Rhymosia cantosa, male, t	100	100	129	84	64	48	32	122	132	138	71	55	39	29	152	188	142	62	45	32	23
Rhymosia imitator, male, t	100	100	117	74	52	39	30	117	126	133	74	–	–	–	133	178	144	–	–	–	–
Rhymosia akeleyi, male, c. t	96	100	111	82	59	41	30	119	122	126	66	44	33	26	141	165	132	51	41	26	18
Rhymosia akeleyi, male, t	100	100	120	83	60	43	30	120	140	133	70	50	33	27	147	183	132	57	37	27	20
Rhymosia inflata, male, t	100	100	114	74	58	39	26	116	123	119	68	51	32	26	136	168	130	55	36	26	19
Rhymosia serrines, male, t	90	100	160	85	60	30	25	–	–	–	–	–	–	–	140	185	135	65	–	–	–
Rhymosia diffissa, male, t	96	100	122	77	48	30	22	119	137	141	63	44	30	22	136	185	137	–	–	–	–
Allodia crassicornis, var. a., male	100	100	107	77	60	43	33	133	133	133	70	53	40	27	156	196	127	57	–	–	–
Allodia bulbosa, male, t	90	100	133	57	40	30	23	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Allodia falcata, male, t	86	100	109	72	57	38	28	102	124	124	59	48	33	28	138	166	131	48	38	28	19
Allodia actuaria, male, t	100	100	112	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Allodia beata, male, t	121	100	88	64	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Allodia delita, male, t	–	100	89	74	52	40	34	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Allodia callida, male, t	100	100	91	64	54	36	27	136	136	114	63	50	32	23	–	–	–	–	–	–	–
Allodia bella, male, t	106	100	87	73	53	40	33	–	–	–	–	–	–	–	166	207	140	60	40	27	20
Allodia elata, male, t	100	100	83	72	56	39	31	139	139	125	69	55	33	28	166	195	134	61	45	33	22

Explanation of Plates.

Abbreviations used in the explanation of the plates of the hypopygia. da = dorsal aspect, va = ventral aspect, ma = mesal aspect, la = lateral aspect, a = median ventral plate, s = superior forceps, i = inferior forceps.

Plate.

Hypopygia. Magnification x 60 unless otherwise noted.

98. *Leia cincta,* median ventral process, c, limb of forceps.
99. *L. decora,* la a, median sclerite, x 35.
100. *L. opima,* x 35.
101. *L. sublunata,* x 35.
102. *Phthinia curta,* x 35.
103. *Coelosia lepida,* ma of limb.
104. *C. modesta,* c and b, limbs.
105. *Syntemna rejecta,* x 35.
106. *S. vittata, var fasciata,* b is la of c.
107. *Anatella silvestris,* la.
108. *Docosia dichroa,* terminal appendage of lateral sclerite.
109. *D. nigella,* x 20.
110. *D. nitida.*
111. *Trichonta triangularis,* forceps limb, x 35.
112. *T. bellula,* forceps.
113. *T. diffissa,* forceps.
114. *T. patens,* forceps.
115. *Cordyla manca,* b', ma of b.
116. *C. scita.*
117. *C. volucris,* ma. Forceps.
118. *C. recens.* Forceps.
119. *C. neglecta.* Forceps.
120. *Brachypeza bisignata var. divergens,* latero-dorsal aspect, x 20.
121. *Rhymosia serripes,* x 35.
122. *R. inflata,* x 20.
123. *R. imitator,* x 35. Forceps.
124. *R. akeleyi,* x 35. Apex of hypopygium.
125. *R. captiosa,* x 20.
126. *R. diffissa,* b = va-la, b' = da of b, x 35. Forceps.
127. *Allodia crassicornis,* var a, x 35. Forceps.
128. *A. crassicornis,* var c, x 35. Forceps.
129. *A. bulbosa.* Forceps.
130. *A. actuaria.* Forceps.
131. *A. falcata.* Forceps.
132. *A. elata.* Forceps.
133. *A. bella.* Forceps.
134. *A. beata,* x 40. Forceps.
135. *A. callida,* x 40. Forceps.
136. *A. delita,* x 45. Forceps.

Plate.

Hypopygia. Magnification x 35 unless otherwise noted.

137. *Gnoriste megarrhina,* da.
138. *G. macra,* forceps, ma.
139. *G. megarrhina,* forceps, ma.
140. *Acnemia psylla,* var. da. Forceps.
141. *A. psylla,* da, x 45.
142. *Rondaniella abbreviata.*
143. *Neuratelia silvatica,* da, x 45.
144. *N. scitula,* da.
145. *N. nemoralis,* inner appendage of s, da x 60.
146. *Boletina obscura.*
147. *B. cincta.*
148. *B. melancholicus,* median ventral lobe, x 60.
149. *B. melancholicus,* forceps, x 60.
150. *B. imitator,* x 20.
151. *B. gracilis,* forceps.
152. *B. longicornis,* x 25.
153. *B. notescens,* forceps, x 60.
154. *B. arctica,* after Rübsaamen.
155. *B. nacta,* apex of forceps, x 60.
156. *B. sciarina,* forceps, after Dziedzicki.
157. *B. tricincta,* forceps.
158. *B. delicata,* va, median ventral lobe.
159. *B. delicata,* da, upper lateral lobe.
160. *B. delicata,* va. lower lateral lobe.
161. *B. notescens,* var. a, ovipositor.
162. *Leia melæna.*
163. *L. nigra.*
164. *L. winthemii.*
165. *L. striata,* var. a, forceps la, x 60.
166. *L. plebeja,* forceps, la, x 60.
167. *L. oblectabilis,* forceps, la, x 60.
168. *L. dryas.*

Plate.

169. *Gnoriste megarrhina.*
170. *G. macra.*
171. *Acnemia psylla.*
172. *A. flaveola.*
173. *Rondaniella abbreviata.*
174. *Neuratelia silvatica.*
175. *N. eminens.*
176. *N. nemoralis.*
177. *Leptomorphus ypsilon.*
178. *Allocotocera parvula.*
179. *Boletina obscura.*
180. *B. cincta.*
181. *B. melancholica.*
182. *B. imitator.*
183. *B. gracilis.*
184. *B. longicornis.*
185. *B. notescens.*
186. *B. sobria.*
187. *B. tricincta.*
188. *B. delicata.*
189. *B. obesula.*
190. *B. inops,* var. a.
191. *B. sedula.*
192. *B. nacta.*

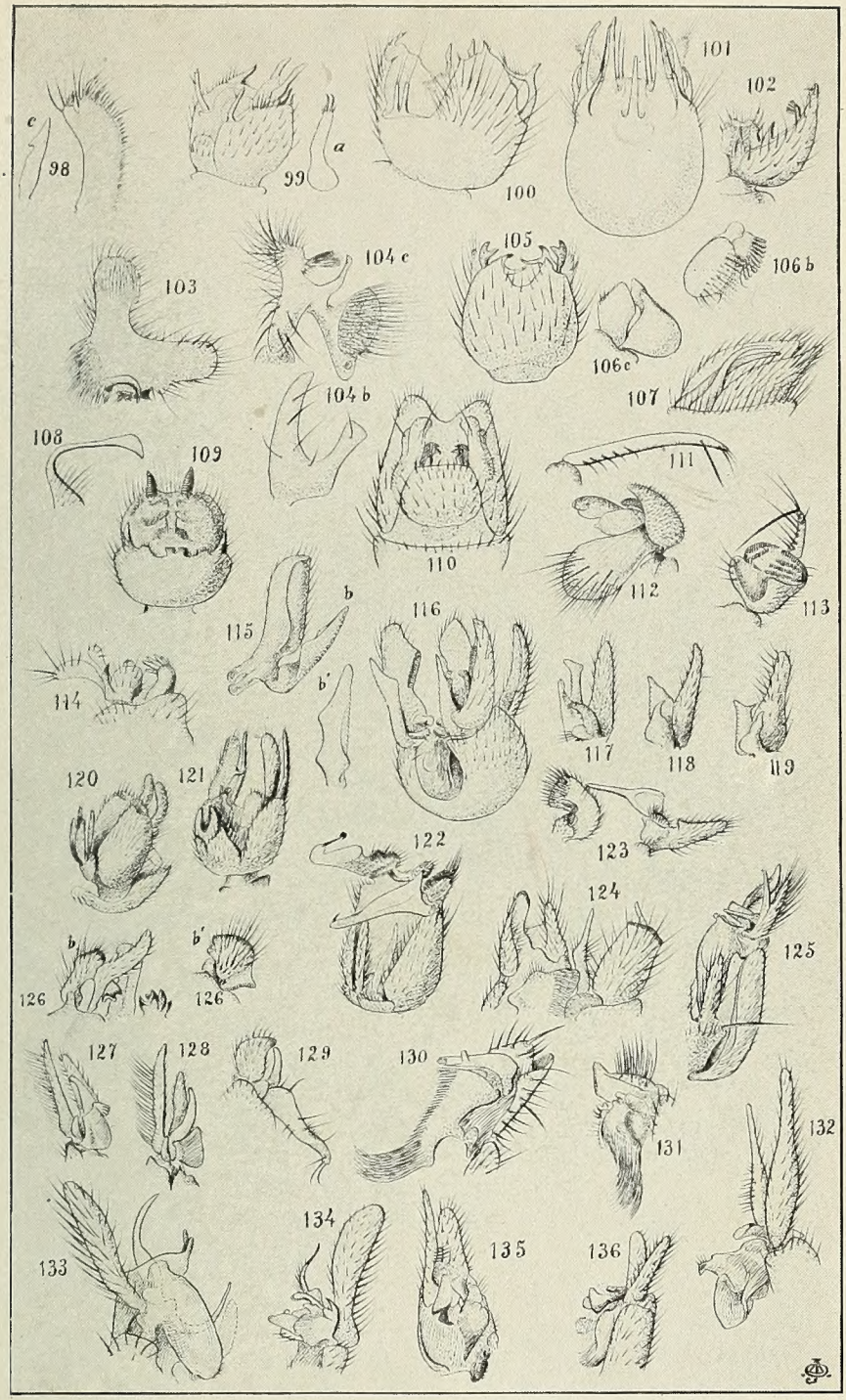
193. *Leia varia.*
194. *L. melæna.*
195. *L. nigra.*
196. *L. ventralis.*
197. *L. cuneola.*
198. *L. winthemii.*
199. *L. striata,* var. a.
200. *L. plebeja.*
201. *L. oblectabilis.*
202. *L. dryas.*
203. *L. cincta.*
204. *L. decora.*

Plate.

205. *Leia opima.*
206. *L. sublunata.*
207. *L. bivittata.*
208. *Phthinia curta.*
209. *P. tanypus.*
210. *Coelosia gracilis.*
211. *C. lepida.*
212. *C. modesta.*
213. *Syntemna rejecta.*
214. *S. vittata.*
215. *S. separata.*
216. *Megophthalmidia occidentalis.*
217. *Anatella silvestris.*
218. *Docosia dichroa.*
219. *D. nigella.*
220. *D. nitida.*
221. *Trichonta triangularis.*
222. *T. diffissa.*
223. *T. patens.*
224. *Cordyla manca.*
225. *C. scita.*
226. *C. volucris.*
227. *C. recens.*
228. *C. neglecta.*
229. *Brachypeza bisignata,* var divergens.
230. *Rhymosia* sp a.
231. *R.* sp. b.
232. *R. serripes.*
233. *R. inflata.*
234. *R. imitator.*
235. *R. akeleyi.*
236. *R. captiosa.*
237. *R. diffissa.*
238. *Allodia crassicornis,* var. a.
239. *A. bulbosa.*
240. *A. actuaria.*

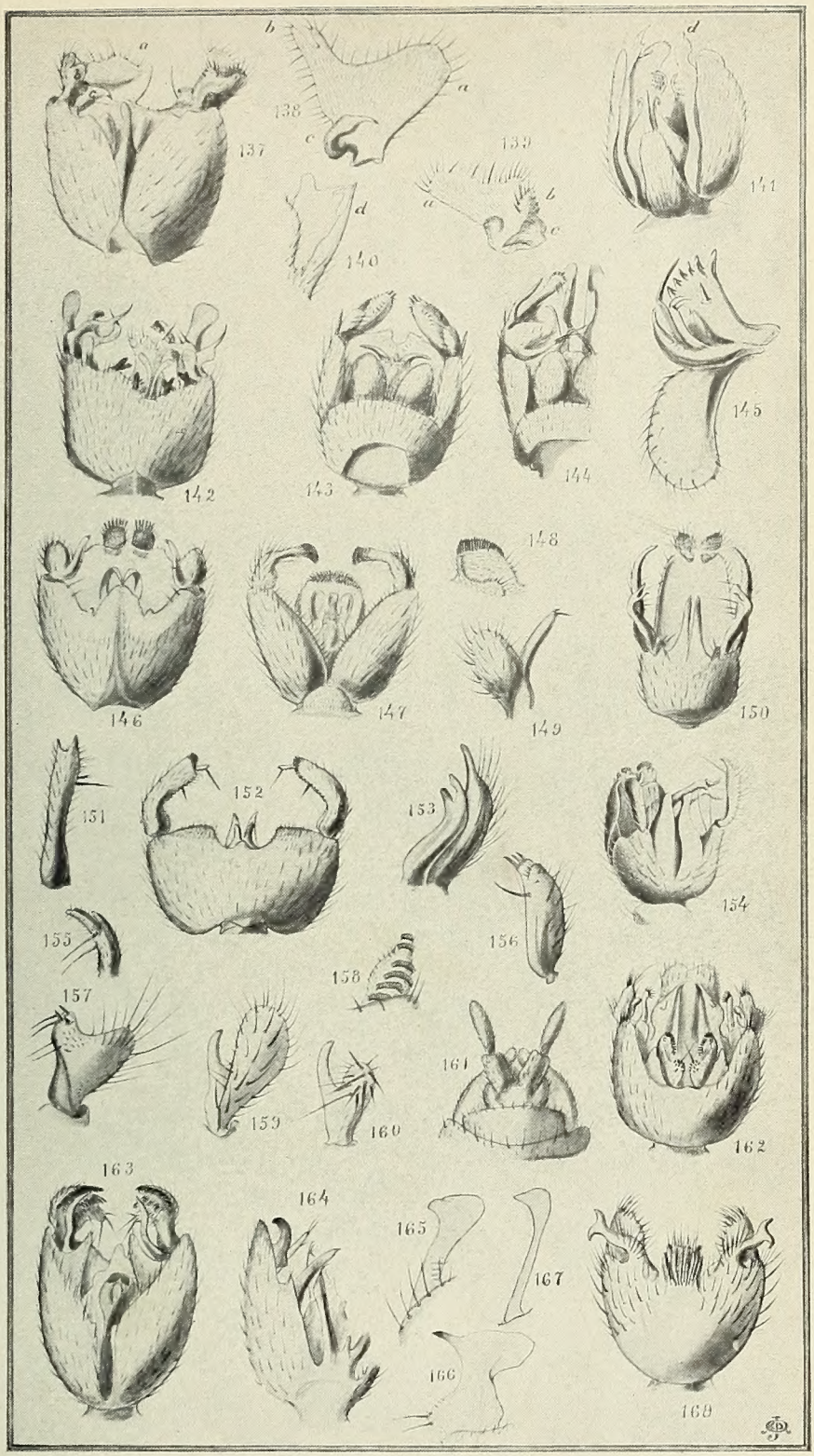
Plate.

241. *Docosia dichroa.*
242. *Exechia.*
243. *Boletina vittata* (Europe).
244. *Leia winthemii.*
245. *Mycetophila punctata.*

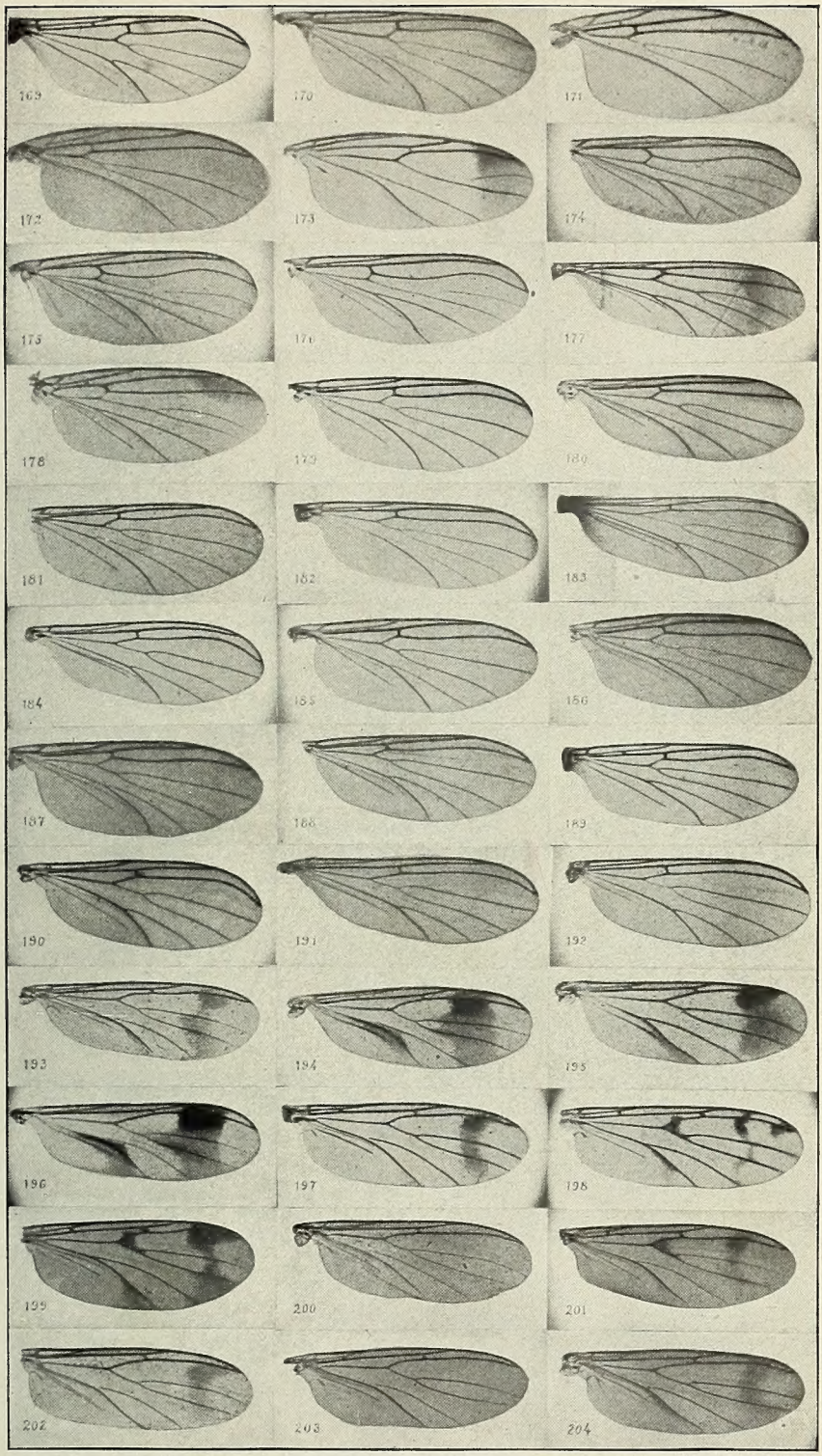


Figs. 98 to 136. Details of hypopygia.

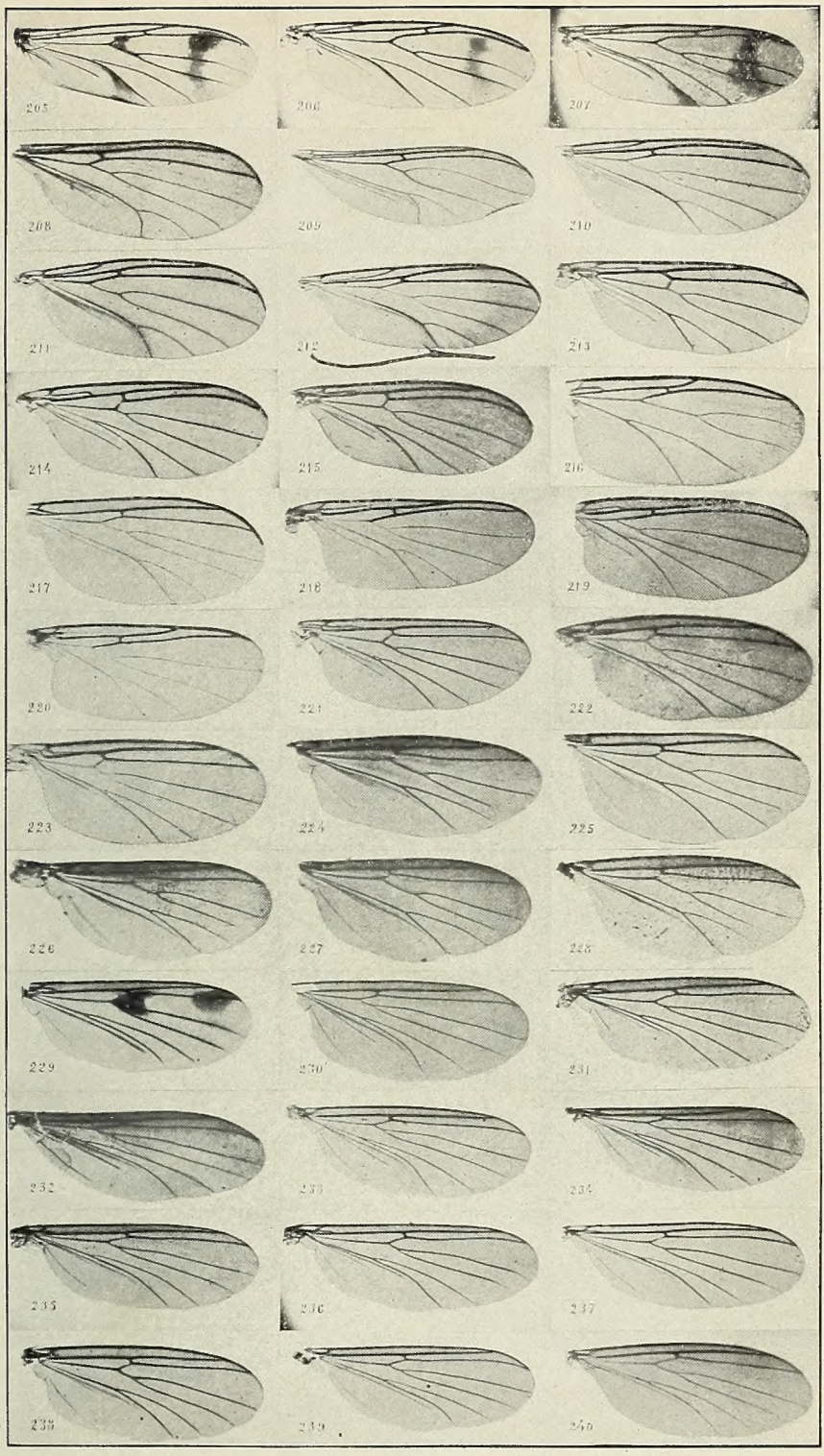
98-101, Leia. 102, Phthinia. 103-104, Coelosia. 105-106, Syntemna. 107, Anatella. 108-110, Docosia. 111-114, Trichonta. 115-119, Cordyla. 120, Brachypeza. 121-126, Rhymosia. 127-136, Allodia.



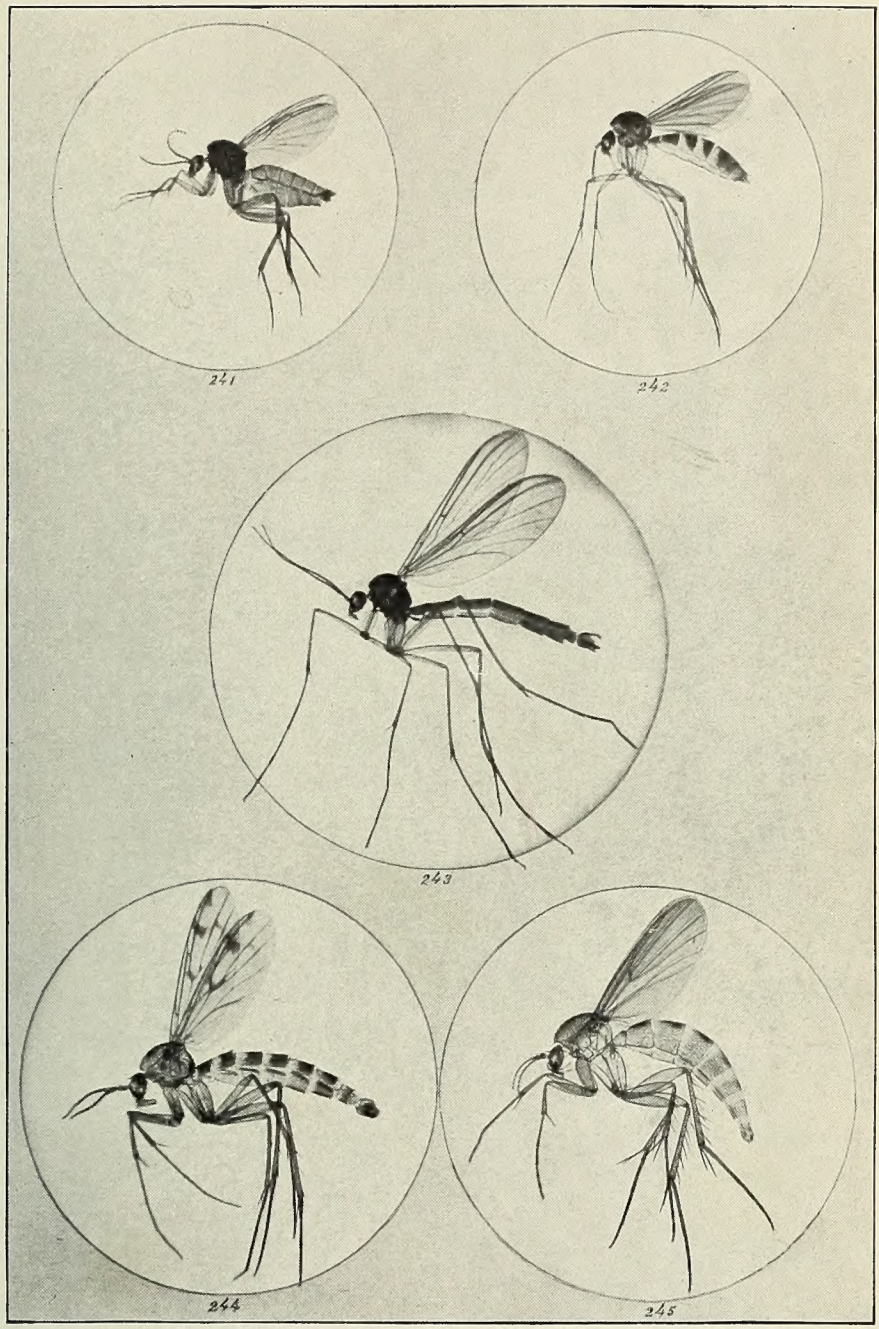
Figs. 137 to 168. Details of hypopygia.
137-139, Gnoriste. 140-141, Acnemia. 142, Rondaniella. 143-145, Neuratelia. 146-160, Boletina. 161, Boletina (*ovipositor*). 162-168, Leia.



Figs. 169-170, Gnoriste. 171-172, Acnemia. 173, Rondaniella. 174-176, Neuratelia. 177, Leptomorphus. 178, Allocotocera. 179-192, Boletina. 193-204, Leia (*Neoglaphyroptera*).



Figs. 205-207, Leia (*Neoglaphyroptera*). 208-209, Phthinia. 210-212, Coelosia. 213-215, Syntemna. 216, Megophthalmidia. 217, Anatella. 218-220, Docosia. 221-223, Trichonta. 224-228, Cordyla. 229, Brachypeza. 230-237, Rhymosia. 238-240, Allodia (+ *Brachycampta*).



241, Docosia. 242, Exechia. 243, Boletina. 244, Leia (*Neoglaphyroptera*) 245, Mycetophila. Photographed from balsam mounts.